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19 February 1985

# Worldwide Report

## EPIDEMIOLOGY

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EPIDEMIOLOGY

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ANGOLA

TYPHOID OUTBREAK ON SAO NICOLAU, PREVENTIVE STEPS TAKEN

Luanda JORNAL DE ANGOLA in Portuguese 20 Nov 84 p 2

[Text] According to a report made Saturday by the weekly VOZ DI POVO, the floods of 16 and 17 September on Cape Verde were followed by an outbreak of typhoid fever on the island of Sao Nicolau that infected more than 200 persons, although it was responsible for only one death.

In earlier statements to ANOP [Portuguese News Agency], Cape Verde Minister of Health and Social Affairs Irineu Gomes regarded it as the beginning of an epidemic that had been brought under control and isolated. He stressed that the necessary measures taken by the health authorities would make it possible to minimize the effects of the typhoid outbreak.

The newspaper, published in the city of Praia, reports that the recent steps taken by the Health Office of Sao Nicolau, namely, the disinfection of drinking water and of the reservoirs "had calmed the people down, although the situation is not yet stabilized."

In the interview that he granted to ANOP, Irineu Gomes expressed the opinion that this epidemic outbreak should be attributed not only to the stagnant waters left behind by the floods, but also and mainly to the deficiencies of the sanitary systems of the area.

The minister of Health and Social Affairs, who also presides over the commission charged with combating the effects of the September floods, stressed that simultaneously with the immediate reinforcement of the medical and treatment teams and the disinfection of all wells and fountains on the island of Sao Nicolau, the authorities launched a campaign to alert the population, so that the people would develop the habit of disinfecting the water with lye before drinking it.

According to the VOZ DI POVO, the typhoid outbreak that developed on Sao Nicolau has "especially affected persons in the 10 to 30-year age bracket, who are the most susceptible to this type of disease because of the carelessness usually shown by children and young people with regard to food and water."

To prevent the epidemic from reaching greater proportions, says the weekly, the health office of Sao Nicolau will soon create at all points on the island local committees to alert the people and to provide them with health education.

At the same time and following the example of what has already happened on the Island of Santiago where the city of Praia is located, and on other islands of the archipelago, a basic sanitation campaign has been launched, to which, according to Irineu Gomes, "the people have shown themselves extremely responsive and which the sanitation authorities regard as fundamental, since almost all diseases are contagious or are transmitted by parasites."

Among the aims of this campaign on Sao Nicolau are included improvement in the collection and treatment of garbage repair and opening of toilet facilities in the schools, construction of dumps remote from populated areas, extermination of stray dogs, prohibition of the sale of tainted foods, government inspection of homes, bars and food establishments and the disinfection of water used for drinking and irrigation.

Cases of typhoid fever following the September floods were recorded only on Sao Nicolau and the minister of Health was of the opinion that there is no danger that the outbreak will spread to other islands and that, besides, it is already practically under control and eliminated.

8089

CSO: 5400/50

BARBADOS

## REVIEW OF EXISTING, PROJECTED HEALTH CARE FACILITIES

Bridgetown SUNDAY ADVOCATE in English 25 Nov 84 Progress Edition p 28

[Text]

THE GOVERNMENT of Barbados continues to conceptualise health and health care delivery as an inextricable part of the country's socio-economic policy. Health therefore goes farther than the provision of infrastructure and the development of programmes and activities.

The development of an effective and efficient health care system can only be brought fully into fruition by the improvement and promotion of inter and intrasectoral linkages which is emphasised in the Primary Health Care approach, with an aim to reducing and/or removing social and economic inequalities.

With this in mind the Government continues to invest a substantial proportion of its budget in health. In spite of a reduction in the Government's Total Current Expenditure for 1983-84 fiscal year, Government has increased its expenditure in the health sector from 14.2 per cent during the fiscal year 1982-83 to 15.1 per cent over the same period in 1983-84.

The Government is working to bring the health status of Barbadians in line with the increase in Government spending in order to achieve the health goal "the highest possible level of health care for all Barbadians, so that they will be capable of working productively, and participating actively in the social life of their country."

In pursuance of this goal the Ministry of Health has over the last year:

- Established a National Health Service Board.
- Established a Division of the Environment.
- Examined plans for the set-

ting up of a National Occupational Health Service.

— Commenced feasibility studies on the Geriatric and Psychiatric Services.

— Completed the study aimed at sewerage the south and west coasts

— Increased the number of Polyclinics

— Established a National Population Task Force

— Improved the Drug Service and instituted more control over the sale and distribution of drugs.

— Received approval to proceed with plans for the expansion and upgrading of the Queen Elizabeth Hospital.

— Begun the process of reorganising the ambulance service.

— Completed the mass anti-polio-myelitis campaign.

— Continued training of health personnel.

In keeping with the Government's belief that the cost of health care should not be a prohibitive factor in determining the quality of care received, plans to provide the total population with health services through the National Health Service have seen some progress.

The National Health Service Board Act was enacted during the year and was assented to by the Governor General on September 14, 1984. Subsequently as provided for under the Act, members of the National Health Service Board were appointed by the Ministry of Health with effect from November 1st 1984.

The Board under the Chairmanship of Mr. John B. Simpson comprises people from various Departments—Institutions such as the Welfare Department, the

Finance and Planning Division, the Pharmaceutical Society, as well as the medical, nursing and business fields.

Essentially the Board is responsible for the provision of General Practice Services to all Barbadians. Two salient features of these General Practice Services will be the provision of services free at the point of delivery as well as an organised service for those persons who need emergency care outside the doctors' normal working hours.

In the future the board will be responsible for administering the Barbados Drug Service.

In March 1984 a new Director was appointed to the Barbados Drug Service which was established in 1980. Mr. Lennox Prescod replaced Mr. John Turnbull, who was its first Director. The Drug Service comprises the Barbados Drug Service Office and the District Dispensary Service.

The main areas of responsibility are:

— The Barbados National Drug Formulary

— The Supply Service

— The Special Benefit Service; and

— The District Dispensary Service.

These services are tools whereby the Drug Service continues to successfully pursue its objectives which are:

— The provision of a continuous supply of Formulary Drugs to all Governmental health care institutions in addition to the private sector.

— The rationalisation of drug selection and drug therapy through its Formulary Service.

— The provision of formulary drugs at affordable prices through its supply service,

— To arrange for the selection, procurement, distribution and utilisation of Formulary Drugs.

— The provision of free — at the point of service — or subsidised drugs to certain categories of persons.

— The strengthening of inventory and general management systems of the Governmental dispensaries; and

— The preparation, maintenance and updating of the Barbados National Drug Formulary.

The Drug Formulary is given free of cost to physicians, pharmacists, senior nurses as well as medical, pharmacy and nursing students. The status of the Formulary Committee has been changed from a temporary to a permanent one and the formulary due to its wide use has become not only a reference document but an educational one as well and some copies are sold to health care personnel outside the region.

Since the upgrading and relocating of Government Dispensaries has taken place, its improved utilisation by the public is illustrated by the increase in patients coming to the Dispensaries.

There continues to be 15 pharmacists operating from 16 Government dispensaries located in:

Ladymeade Polyclinic  
Black Rock Polyclinic  
Maurice Byer Polyclinic  
Oistins at the Sir Randal Phillips Polyclinic

Wildey at the Edgar Cochrane Polyclinic

St. James  
St. Thomas  
St. John  
St. Joseph  
St. Lucy  
St. Andrew  
St. George

Geriatric Hospital Dispensary  
Six Cross Roads Health Centre  
Bayville (Geriatric Compound)

The Special Benefit Service continues to provide an invaluable service to special groups of persons. These include children under 6 years old, the elderly 65 years and over, persons on National Assistance and those requiring special drugs for the control of diabetes, hypertension and—or cancer.

BARBADOS

BRIEFS

GASTROENTERITIS OUTBREAK--Hospital authorities yesterday said there is an outbreak of gastroenteritis in Barbados. They said that the outbreak started three weeks ago and currently the children's ward is 50 per cent full with such cases. It is the first time in years that the island has experienced such an outbreak and particularly around Christmas time. This viral infection starts with vomiting and diarrhoea. When hospitalised, the patients are treated intravenously. The infection attacks both children and adults, but adults seem to be better able to cope with it. Lady Springer yesterday visited the two children's ward--C7 and C8 and distributed gifts to the children. [Text] [Bridgetown BARBADOS ADVOCATE in English 21 Dec 84 p 1]

CSO: 5440/027

BRAZIL

BRIEFS

SCHISTOSOMIASIS CASES--Seventeen municipalities in Rio Grande do Norte located along the eastern coast, including the districts around Natal, have again reported cases of schistosomiasis at levels ranging from 4 to 20 percent. This news was announced the day before yesterday in Natal by the regional director of the Superintendency for Public Health Campaigns (SUCAM), Humberto Gurgel. The problem has not yet reached critical proportions, Gurgel pointed out, since the lethal forms involving the liver and spleen are virtually under control. One hundred persons, including physicians, health workers and instructors, are currently conducting a health campaign in the affected municipalities. Altogether, the 17 municipalities have a population of about 730,000 (including Natal). In addition, another 17 municipalities have also recently recorded cases of schistosomiasis, but the incidence is controlled at under 4 percent. During the 70's, the health minister in Geisel's administration, Almeida Machado, conducted virtually a one-man campaign to eradicate schistosomiasis in Rio Grande do Norte, and he almost succeeded in his endeavor. [Text] [Sao Paulo O ESTADO DE SAO PAULO in Portuguese 15 Dec 84 p 10] 9805

AFRICAN SWINE FEVER WARNING--Belo Horizonte--Elvio Carlos Moreira, director of the Veterinary School at the Federal University of Minas Gerais and a consultant in the Agriculture Ministry's Program to Eradicate African Swine Fever, yesterday issued a warning that the disease could be reintroduced into the country at any time unless health control measures are adopted, primarily at the airports and seaports. Like all Brazil's airports, at Rio de Janeiro International Airport, where the disease was introduced into the country in 1978 in pork found in the garbage of a plane that was to be used for animal feed, there is no furnace where the garbage can be incinerated, as is the case in most countries. According to the epidemiologist, unless furnaces are installed to incinerate all the garbage from foreign planes and ships, and Brazil prohibits pork products from Portugal, Spain and African countries from entering the country, in addition to adopting other measures, African swine fever can return. According to Elvio Moreira, if the disease, which Brazil has eradicated as of this week, is reintroduced into the country, the effects will be even worse than they were in 1978, since farmers are not going to agree again to sacrifice their animals as they did on the earlier occasion. [Text] [Rio de Janeiro O GLOBO in Portuguese 17 Dec 84 p 5] 9805

HEPATITIS CASES IN PEREIRAS--Between October and December, 25 cases of hepatitis were recorded by the Health Center in Pereiras, a city with only

2,500 inhabitants in an urban area, indicating an outbreak of the disease. In the past 6 months, the Health Center has identified 50 cases, but Prefect Marcio Vieira de Campos says that there have been more than 80 cases, or one per 30 inhabitants. Despite all the efforts made, the causes of the outbreak have not been confirmed. This week two more cases were admitted to hospitals in the nearby cities of Conchas and Laranjal Paulista. Dr Oswaldo de Campos from the Health Center said that the incidence of hepatitis is always high in Pereiras, where practically the entire population consumes water from untreated wells. [Text] [Sao Paulo O ESTADO DE SAO PAULO in Portuguese 29 Dec 84 p 8] 9805

YELLOW FEVER IN SANTOS--The Superintendency of Public Health Campaigns (SUCAM) yesterday continued the task of disinfecting the Estuary district in Santos, where two nuclei of larvae from the "aede aegypti" mosquito, the carrier of yellow fever, were found recently. The first application of the insecticide "Sumithion" in the Estuary ditches was done a week ago. According to the SUCAM team, there are no more larvae or yellow fever-carrying mosquitoes in the Estuary. The first step will be to do a similar job in the Aparecida district, near the Viscount Ouro Preto Square, where 10 larvae were detected. Adult mosquitoes are already being caught in the district to see if they are yellow fever carriers. Disinfection of the area will take place within a week. [Text] [Sao Paulo FOLHA DE SAO PAULO in Portuguese 14 Dec 84 p 20] 8711

KILLER BEES IN RECIFE--A child was attacked by a swarm of wild bees--a cross between African and Italian bees--and is in serious condition in the hospital in Recife. Elias Jose Barbosa, 6 years of age, had his face partially deformed after suffering more than 200 bee stings. The bees also attacked Astrogildo Manoel Pires, 64 years of age and the child's grandfather, who is still under medical care. Although that is the most violent bee attack in recent years in the capital of Pernambuco, the Fire Department revealed that last year in Recife more than 1,300 swarms of bees were destroyed through the use of flame-throwers. In recent attacks, those insects invaded the Campos das Prince as building of the state government and the police station in the Recife district of Casa Amarela, where Police Chief Genival Albino had to wrap himself in his office drapes to escape the bee attack. Beekeepers consider the presence of large swarms of bees in Recife to be a normal occurrence. Jose Bonifacio Amaral, member of the Pernambuco Beekeepers Cooperative asserted that the number of swarms has been increasing each year because Recife is a city of many trees and consequently has beautiful blossoms, "a marvelous environment for the multiplication of the bees." According to the beekeepers, the bees "do not do any harm; they make honey" and "only attack when they are attacked." For that reason, the commander of the Fire Department, Colonel Assis Ferraz, plans to sign an agreement with the beekeepers' cooperative so that the people may be made aware of the importance of those insects and the soldier may be trained to capture them and not destroy them, as has been occurring. According to the beekeepers, that destruction represented a loss of more than 600 million cruzeiros for the state in 1984. [Text] [Sao Paulo O ESTADO DE SAO PAULO in Portuguese 10 Jan 84 p 14] 8711

HEPATITIS IN PEREIRAS--All household wells that supply Pereiras, a city with a population of 2,500 in the urban area may be proscribed by order of the Regional Health Department of Sorocaba on suspicion of being the cause of the outbreak of hepatitis that has occurred in the city. In the first 10 days of the year alone there were 12 cases of the disease, which in the last few months has caused 40 persons to be hospitalized, according to the city's health center. Meanwhile, Mayor Marcio Vieira de Campos and pharmacist Carlos Gazzola assert that the number of cases is much greater, being around 100; that is, an average of one case per 25 persons, which demonstrates the seriousness of the problem. Yesterday, doctors from the Tatui sanitary district were conducting a broad survey in the city in an attempt to identify the causes of the high incidence of hepatitis, which has already attained what are considered to be dangerous epidemic proportions. "The analyses we made of the water in the wells revealed contamination in various degrees and probably that is the explanation for the problem," revealed Dr Nilton Namoro Sazaki, interim chief of the Tatui Sanitary District. He explained that the majority of the residents of Pereiras use water from those household wells because the water distributed through the faucets--coming from the only artesian well in the city--has too much fluorine, which stains the teeth in addition to spoiling the taste of the water. [Text] [Sao Paulo O ESTADO DE SAO PAULO in Portuguese 11 Jan 84 p 10] 8711

LEISHMANIASIS EPIDEMIC--Manaus--In the face of the serious leishmaniasis epidemic--nearly 50 new cases are being reported daily at the Tropical Medicine Institute in Manaus [Instituto de Medicina Tropical de Manaus]--Amazon State health officials on 24 January launched an offensive seeking to halt the disease in its local area. According to Heitor Dourado, the director of the Tropical Medicine Instituto, the 300 to 400 cases that are usually reported each year have significantly increased and 112 patients are currently being treated. [Excerpts] [Rio de Janeiro O GLOBO in Portuguese 25 Jan 85 p 7 PY]

CSO: 5400/2025

CZECHOSLOVAKIA

SECOND WHO CONFERENCE ON INOCULATION POLICY

Prague RUDE PRAVO in Czech 22 Dec 84 p 2

[Interview with Lubomir Syrucek, MD, chairman of the Second WHO Conference on Inoculation Policy, by Zdena Stepankova[

[Text] In the middle of December, the second World Health Organization conference on inoculation policy in Europe took place in Karlovy Vary with representatives from 27 European countries present. Twenty-five years have passed since the first conference met in Rabat, Morocco. In the meantime, the prevention of contagious diseases has centered primarily on other continents, since Europe was considered to be an area without serious problems. As it turned out, this is not the case.

We have asked the chairman of the conference, Prof Lubomir Syrucek, MD, CSc, for further information.

[Question] What were the main themes which the conference dealt with?

[Answer] First of all, it was necessary to take stock. We had to find out how inoculations are being administered in Europe against diseases which could be conquered and controlled by inoculation.

[Question] What was the outcome of the stock taking?

[Answer] It was very interesting. For instance, while in our country 18 inoculations are prescribed from the 4th day after birth till the 18th year of age, in Denmark it is only 9, in Belgium 8, in France 11, in Ireland 7, in the Netherlands 8, and some of them are not even obligatory. One might say that we in Czechoslovakia are a superpower, but other socialist states, too, pay attention to prevention of contagious diseases. For instance, in the GDR there are 15 obligatory inoculations, and in the Soviet Union 12.

[Question] The number of inoculations must be reflected in the number of cases of illness. Can you cite some examples?

[Answer] Certainly. I will cite two children's diseases: measles and whooping cough. Last year there were 31 cases of measles in Czechoslovakia, in the GDR there were around 10,000, in Denmark 31,000, in Greece 24,000, in Italy 20,000, in Great Britain 115,000, and in Spain 30,000.

As far as whooping cough is concerned, in our country 123 cases were reported, in Italy 15,000, in Denmark 1,600, in Great Britain 21,000, in Spain 35,000, and in Greece 55,000. Just these two contagious diseases which strike mostly children justify inoculation.

However, the results of inoculation of adults against tetanus are also worth mentioning. Before the introduction of inoculation of adults against tetanus in the years 1974-1975, there were in our country from around 100 to 150 reports of tetanus per year. Last year, there were only 8 cases, while in France there were 120, in Italy 188, in Portugal 83, and in Morocco 300. In this instance, the importance of inoculation is heightened by the fact that tetanus is fatal in 50 percent of the cases.

[Question] Why was Czechoslovakia chosen to host the conference?

[Answer] One can give a brief answer--because we have had good results. I have already cited some examples. The inoculation policy, though, does not consist only in administering the inoculation substance and stamping out contagion in this way. Achieving the results that we have achieved in our country demands painstaking work. First, the precise nature of the source of the contagion and the epidemiological parameters must be established--in which age brackets, in which area, and in which season of the year the disease strikes. Good quality inoculation substance must be at hand. The inoculation process must be well organized, which the socialist health services, represented in our country by hygienic services, decisively make possible.

The matter, though, does not end with inoculation. Every year we conduct so-called serological surveys, through which we determine our populations' resistance to selected contagious diseases. We are the only country in the world that has been conducting this important research annually for decades. In this way we can uncover possible shortcomings and remove them clinically. Therefore, we also included the results of Czechoslovak health services that pertain to the prevention of contagious diseases through inoculation in the working papers of the participants of the conference. They refer especially to infantile paralysis, measles, diphtheria, whooping cough, tetanus, attacks of roseola in the newborn, etc.

[Question] What resolutions did the conference do?

[Answer] The World Health Organization will send a number of recommendations to all governments of European nations. It will have to have at its disposal precise reports about the morbidity, the complications and the mortality due to individual contagious diseases. There will have to be an improvement in the organization of inoculations so that at least 90-95 percent of children, and in the case of some diseases perhaps even of adults, would be covered. The right inoculation substance, one that meets the requirements of the World Health Organization, will have to be used. Here I would like to point out that thanks to the Institute for Serums and Inoculation Substances, all our inoculation substances meet these criteria. Immunological surveys which will control the effectiveness of the inoculation will be conducted, and thus in case of some oversight or mistake it will be possible to make improvements.

[Question] What would you say if I asked you if our system of health services proved instructive or even provided an example?

[Answer] It did, and the participants of the conference showed real interest in our experience.

12435

CSO: 5400/3002

EL SALVADOR

GUERRILLAS TO ALLOW VACCINATION CAMPAIGN IN EAST

San Salvador LA PRENSA GRAFICA in Spanish 16 Jan 85 pp 3, 70

[Text] Colombian and American experts are in the country to advise the child vaccination brigades.

Yesterday they were introduced at the Ministry of Public Health and Social Services by Dr Rolando Hernandez Argueta, chief of the Epidemiology Division, who said that the vaccines are now ready saved in the "Cold Chain" system. He also said that everything is planned for the three child vaccination national campaigns, on Sundays, 3 February, 3 March, and 21 April.

The Colombian experts are: Alberto Uribe, Expanded Vaccination Program (PAI) of the WHO-Pan American Health Organization (PAHO); Wilson Rodriguez Quiroga, director of the Health Information System at the Colombian Public Health Ministry and adviser to the WHO-PAHO; Enrique Silva Pizano, head of immunizations in the same Colombian ministry and adviser to the WHO-PAHO; Edilberto Suaza Calderon, consultant to UNICEF; and Victor Gomez Serna, consultant on Cold Chain to WHO-PAHO; the American is Dr Harrison Stetier, pediatrician and epidemiologist at the Center for Disease Control in Atlanta, Georgia.

They will advise those responsible for the vaccination campaigns and will also work along with brigade members on the three campaigns which will include 6,000 people to vaccinate 400,000 children between the ages of 1 and 3 years old against polio, measles, diphtheria, and tetanus.

The vaccination posts will be set up in public buildings, schools, parks, and plazas in the communities and in San Salvador. Apart from these places, vaccinations will take place at "Benjamin Bloom" Children's Hospital.

A reliable source has told our editor that in San Miguel spokesmen for the guerrillas have promised health officials of the eastern region that on the days of the vaccination campaign they will not undertake operations against the vehicles transporting the brigade members and the vaccinations so that the children living in the areas of conflict can be vaccinated.

In addition, it has been stressed that the vaccines are harmless and that they can be given to children suffering from colds, except for children who have high fevers or gastrointestinal illnesses. They explained that the vaccine is not sterilized.

FINLAND

SWEDEN WARNS OF POLIO DANGER AS NUMBER OF CASES GROWS

Stockholm DAGENS NYHETER in Swedish 15 Dec 84 p 6

[Article by Ingemar Lofgren: "Polio Warning to Christmas Travelers"]

[Text] Unvaccinated infants, regardless of age, should be vaccinated for polio, getting at least two shots before traveling to Finland. This is one of many recommendations now being issued by the Swedish authorities to travelers planning to go to Finland during the Christmas holidays.

Two confirmed cases of type-3 polio with paralysis symptoms have now been reported in Finland, one in Uleaborg and one in Abo. In addition to this, about a hundred symptom-free carriers have been found around the country. It was for this reason that the Board of Public Health and the State Bacteriological Lab discussed the Swedish polio protection program Friday.

"Since the polio virus has been found at several places, it cannot be ruled out that the virus may be generally distributed," says Lars Olof Kallings, head of the State Bacteriological Lab, in an interview with DAGENS NYHETER.

A public program in Finland is now offering an extra vaccine dose to all children. The major problem for them is that up to now they have received a vaccine which has a poor effect on type-3 polio.

"The Swedish vaccine, on the other hand, gives good protection against all three types of polio," says Kallings. Those who were vaccinated following Swedish recommendations and with Swedish vaccine have good protection. This is also true of small children who were vaccinated in accordance with the program of the pediatric centers. In spite of this, the State Bacteriological Lab and Health Board want to go ahead and warn holiday travelers going to Finland.

Persons born between 1948 and 1960 should complement their polio protection by getting their fifth shot. The reason for this is that the vaccine available in Sweden during the 1950s was less effective than today's.

Infants who have not yet been vaccinated should receive vaccine injections at least two times before departure. Children are not usually vaccinated before

they are 9 months old, but it can be done earlier, says Kallings. The problem is simply that some time must pass between shots.

"Unfortunatley, this means that infants will not have time to get full protection before Christmas," adds Kallings.

Those who have been vaccinated only with the vaccine available in Finland up to now--e.g., all Finns living and working in Sweden--should get a booster dose before leaving on the trip. The State Bacteriological Lab says that this provides quick and adequate protection.

Concerned Stockholmers planning to travel to Finland over the Christmas and New Year's holidays besieged the information office of the health department Friday, asking advice on vaccination. The telephone exchange eventually became jammed, for it was already strained by those inquiring about the danger of diphtheria in Sweden.

9992  
CSO: 5400/2511

FINLAND

ADDITIONAL CASES OF POLIO REPORTED

Stockholm DAGENS NYHETER in Swedish 20 Dec 84 p 6

[Article by Eva Hernback: "Two New Polio Cases"]

[Text] Two new polio cases have been confirmed at Helsinki University's main hospital. Swedes planning to travel to Finland are being advised to make sure that they have adequate protection before they travel.

The two new cases of polio in Finland are a 31-year-old woman and a 30-year-old man, both suffering from paralysis caused by polio virus, TT [Press Wire Service, Inc] reported on Wednesday. Two cases reported in Finland earlier this fall.

"This development was foreseeable," says Professor Lars Olof Kallings, head of the State Bacteriological Lab in an interview with DAGENS NYHETER. This does not change our earlier recommendations to Swedes who are planning to visit Finland over the Christmas holidays.

Kallings says that the first case was a 6-year-old boy who was stricken with meningitis, a condition caused by polio virus. This brings to 5 the number of cases of the disease in various places in Finland. In addition to this, a hundred cases of symptom-free carriers were found just last week.

The spread is already too wide for it to be practical to quarantine all the carriers that are found, says Kallings.

Swedes should make sure that they have adequate protection before traveling to Finland. To be on the safe side, they can take an extra shot; this is not at all dangerous.

Infants who have not managed to get their polio shots at the pediatric centers can immediately receive a vaccination injection, but a second shot cannot be taken before Christmas, and therefore full protection cannot be given. At least a month must pass between the first and the second shots.

"Infants normally have antibodies from their mothers. This protection gradually wears off, and at the age of 4 months one should get protection if

there is a risk of contact with the infection. There is nothing to prevent an even earlier vaccination, says Professor Kallings. -

Finns living and working in Sweden who were only vaccinated in Finland previously should also arrange for an extra polio vaccination before visiting relatives during the holidays, those at the bacteriological lab stressed. The vaccine used in Finland has not offered complete protection against type 3 of the three polio types.

The same pertains to adult Swedes born between 1948 and 1960, for during the 1950s the same type of vaccine was being used in Sweden.

--The polio cases discovered recently in Finland have prompted thousands of Vasterbotten citizens to get vaccinations. At Umea's regional hospital, hundreds of people are being vaccinated each morning at the contagious-disease clinic.

9992  
CSO: 5400/2511

FINLAND

ENTIRE POPULATION GETTING POLIO VACCINATION AS DISEASE SPREADS

Stockholm DAGENS NYHETER in Swedish 10 Jan 85 p 8

[Article: "Everybody Inoculated Against the Polio Infection"]

[Text] Mass-vaccinations against polio are now under way in Finland after several cases of the illness. Extensive vaccination is not necessary in Sweden, since the population is well protected. There are exceptions, however, among immigrants and infants.

During the autumn there were several cases of polio or infantile paralysis in Finland. It was decided then that all children should be vaccinated. Now the Finnish National Board of Health has decided to extend the vaccinations to the entire population, since it is feared that there are persons who are carriers without knowing it. A mass-vaccination will keep the polio virus from spreading again. It is hoped that the campaign will be accomplished during February/March.

"There is a solid immunity among the population in Sweden, so a mass-vaccination is not necessary," says Professor Lars Olof Kallings of the State Bacteriological Laboratory.

"There are exceptions however, among immigrants, who have not been part of the Swedish vaccination policy and among infants, who have not yet received their vaccinations. Members of these groups ought to be vaccinated if they are thinking of traveling to Finland."

"The virus now being let loose in Finland is a harmless vaccination virus that only enhances the protection against polio if it comes over to Sweden," says Lars Olof Kallings.

12339  
CSO: 5400/2516

FINLAND

ARCTIC MEDICAL RESEARCH CENTER ESTABLISHED IN OULU

Helsinki HELSINGIN SANOMAT in Finnish 14 Nov 84 p 13

[Article by Marja Salmela: "Arctic Medical Research Studies Northern Diseases"]

[Text] Oulu (HS)—How can a person save himself from freezing to death? How do cold air and air pollutants affect one's health? Is the same thing happening to people as to northern trees? They are already suffering severely.

These are problems for researchers in both the Arctic and the Antarctic. The Nordic Secretariat for Arctic Medical Research in Oulu has been collecting data on diseases affecting northerners.

Now the Finns are planning to develop it into a research institute if only the other Nordic countries agree to allocate funds for one.

"We have a site reserved for it if the institute later needs its own premises," Oulu University president Markku Mannerkoski promised.

Three people are now working at the secretariat, which is headed by Assistant Professor Frej Stenback. It gets its funds from the Nordic Council, but they would not go very far toward covering real research activities.

The northern regions are of ever greater interest because of their oil and natural gas. The researchers have been occupied with working conditions in them. "We have been developing an Arctic diving suit and considering new types of rescue procedures for drilling platforms," Stenback reported.

Do the Causes of Diseases Lie in the Food?

The researchers believe that they have found answers to the questions as to why cirrhosis of the liver and heart disease are rare and why, on the other hand, diabetes and [high] blood pressure trouble northerners in people's life style and eating habits.

"On the basis of statistics, it appears that northerners are less subject to madness and rage; cirrhosis of the liver is very rare. We, nevertheless, know that you don't spit into a bottle near the Arctic Circle," Frej Stenback said.

What prevents such a common disease in Central Europe? Do people there eat some kind of food that contains substances that prevent cirrhosis of the liver?

"In the North they eat a lot of fish, which contain vitamins. This may be one reason, but we have to find out whether this hypothesis holds true."

When an answer is found, inhabitants of regions other than the Arctic will also benefit from it. The same may hold true for heart disease, which is also "less frequent there than it ought to be."

In the North it is still relatively rare for people to suffer from cancer. Earlier very rare lung cancer is, however, sharply increasing; there are at present more cases there than in Southern Finland.

"Enlightenment and through it the cessation of cigarette smoking have not so far managed to affect the situation, as has happened in the South," Stenback, who has been trained in pathology, said.

In the North stomach cancer is also more often a complaint than in the South. "When refrigerators arrived on the scene, food quality improved. The causes of stomach cancer disappeared from food. The same line of reasoning may apply to this as to enlightenment about smoking," Stenback thought.

#### Secret Hormone

The distribution of daylight and the cold may make the northerner's organs and metabolism adapt in a different way than those of the person who lives farther south. There is already evidence to support this hypothesis.

The surprisingly high incidence of severe diabetes in Northern Finnish children aroused the interest of Prof Hans Oker-Blom, one of Stenback's predecessors. He set out to determine the reason why the body's organs are incapable of using all the sugar it produces.

Oker-Blom discovered that a blocking agent was lacking. From the pancreas he synthesized a substance that produces an immunological reaction in the patient.

The professor developed a method of treatment on the basis of the principle: The dangerous surplus sugar must be gotten out of the body. In this way the patient's metabolism would be made more effective and the sugar would be eliminated from his organs.

Northerners also differ from those who live in the South in their ability to conserve heat. There are clearly different amounts of fats in them which direct heat production.

The secret of the pineal gland must also be unraveled. It secretes a substance called melatonin. The precise effect of this hormone is not known. Stenback's predecessor, Dr Juhani Leppaluoto, was the first to isolate melatonin in a test tube.

Now researchers are determining how the distribution of daylight regulates the secretion of the hormone. They are also interested in determining whether melatonin affects the human psyche.

The famous Salc Institute in Chile is at present investigating the problem. It is concentrating on studying how chemical changes are reflected in a person's mental state, that is, whether mental illnesses can be explained by factors other than environmental factors.

So there is enough to be studied. And that is why the Finns want more funds with which they can pay their top researchers.

"Finland and Oulu are positively the only proper sites for an Arctic medical research institute. Their connections with the Soviet Union are also a trump card of the Finns," Swedish Prof P.O. Granberg, the chairman of the coordinating committee for this field of research, argued on Tuesday in Oulu.

11,466  
CSO: 5400/2506

INDIA

## ENCEPHALITIS VACCINE EFFORTS

Madras THE HINDU in English 17 Dec 84 p 16

[Text]

NEW DELHI, Dec. 16.

Efforts are under way to develop a Japanese encephalitis (JE) vaccine using a strain that can provide broad protection and is a good immunogen; according to Dr. V. Ramalingaswami, Director-General of the Indian Council of Medical Research (ICMR).

Presiding over the Dr. J. B. Srivatsava award oration by Dr. Asha Mathur here, he said JE was spreading in many South-East Asian countries. In India, the National Institute of Virology in Pune had established a method of diagnosis, dispensing with the need for a second blood sample.

Referring to the project to produce JE vaccine at Kasauli (Punjab) with Japanese collaboration, he said that by 1986 end, two million doses of the vaccine would be available. Studies would be carried out on a bivalent vaccine, being produced in Japan, using the Nakayama and Beijing strains of the virus.

Dr. Asha Mathur said that JE virus infection during pregnancy was transmitted to the foetus. Quoting results of studies at the KG Medical College, Lucknow, she said the protective immune mechanism remained effective for the first two weeks only.

If the virus persisted beyond this period, transplacental transmission might occur in consecutive pregnancy through re-activation of the dormant virus as pregnancy was known to produce a state of immuno-suppression.

CSO: 5450/0064

IRELAND

## 80 PERCENT OF ABATTOIRS UNFIT, FACE GOVERNMENT ACTION

Dublin IRISH INDEPENDENT in English 20 Dec 84 p 5

[Article by P. J. Cunningham]

**[Text]** FEWER than one in five of the country's abattoirs are suitable for killing to supply meat for the domestic market, the most recent survey on hygiene and other standards in these premises has concluded.

As Agriculture Minister Austin Deasy pledged a crackdown on sloppy standards, it has also emerged that ten counties have no premises deemed suitable for slaughtering by the Department of Agriculture.

And a further seven counties had less than two premises considered up to standard, meaning that more than half the country is currently being supplied with meat from inferior plants.

And in a surprise development in the highly rated export abattoirs, it has been confirmed that eight of these plants were reported to the department by an Israeli veterinary inspector, as being dirty and lacking in general hygiene standards.

However, a department official yesterday refused to reveal the reasons behind Mr. Sharkor's criticism. "These things are confidential," he told the Irish Independent.

The decision to tighten controls could mean the appointment of a full-time veterinary inspector for each county.

UCD Professor Dan Collins said such appointments would add badly needed co-ordination to the scheme which was little more than a token gesture to inspection in certain areas.

He said the 170 part-time vets involved in the scheme could work much more effectively if they were directed by a local person in charge.

### SPOT CHECKS

The county's vets last night welcomed the new move, which was announced only three weeks after a full page feature story in the *Irish Independent* highlighting the potential dangers under the present system.

Under the changes proposed by the minister, it is almost certain that similar levies to those already applying in the export section would be charged. Spot checks would be operated.

Counties without unacceptable slaughterhouses are Kildare, Leitrim, Longford, Mayo, Meath, Monaghan, Offaly, Roscommon, Westmeath and Wexford.

Cavan, Donegal, Louth and Sligo had less than two suitable, but Kerry with 30 suitable abattoirs. Cork has 48, Galway 23, Kilkenny 12, Tipperary 8, and Dublin city and county 8 each.

Of the 856 slaughterhouses in the Republic, only 162 were suitable with more than 500 either entirely unsuitable or needing a lot of work.

CSO: 5440/030

LAOS

Briefs

CONFERENCE ON MALARIA--On 8 September in the Malaria Parasite Institute in Vientiane Capital there was a closing ceremony for the gloriously successful first 3-month training period for cadres who are responsible for malaria prevention and resistance at the grassroots level. Those who participated in this training were Mr Khamliang Phonsena, minister of Public Health, and a great many representatives of departments, institutes, schools, and hospitals around the Ministry of Public Health. There were also SRV experts, and representatives of WHO and the Mother and Child Organization of Laos who honorably attended the closing ceremony for this training. According to the summary of the Malaria Parasite Institute chief, the training session on malaria prevention and resistance was conducted on 15 June 1984 to 8 September 1984. There were guiding cadres at malaria stations in Xieng Khouang, Houa Phan, Luang Prabang, Sayaboury, Vientiane, Vientiane Capital, Khammouan, Savannakhet, Champassak, and Attopeu who attended. This training was aided by WHO and the Mother and Child organization, and especially teaching by SRV experts. In this training each cadre listened and studied different documents, e.g., documents on parasitic germs, malaria, disease-bearing insects, malaria treatment techniques, prevention and resistance, ways to organize and control malaria, etc. [Text] [Vientiane PASASON in Lao 12 Sep 84 pp 1, 3] 9884

SRV-AIDED EPIDEMIOLOGY WORK--Recently the committee responsible for health and epidemiology of the Ministry of Public Health closed the first gloriously successful training on virology for cadres who are responsible for public health in different production bases nationwide. This first training on virology was carried out on the basis of implementing the sixth plenum, third session, of the party Central Committee executive committee, and the 5-year plan of the Ministry of Public Health, generally speaking, and in particular its purpose was to carry out the plan of the Health and Epidemiology Institute in upgrading cadres. This training was aided by SRV experts, the UN Organization for Development, and WHO and was carried out over 3 weeks. There were over 20 cadres who are responsible for disease analysis in provinces, departments, and institutes around the Ministry of Public Health, and cadres from the Agriculture Ministry. This training went deeply into the analysis of viruses from influenza and polio, and brain damage and hemorrhagic fever. The theoretical and practical training was far more effective than expected, and enabled all cadres to grasp the resolution on different kinds of diseases. It also became a base construction for the expansion of the virology lab of the Health and Epidemiology Institute. [Text] [Vientiane PASASON in Lao 17 Sep 84 pp 1, 3] 9884

XIENG KHOUANG ANTI-MALARIA WORK (KPL)--After 3 months of studying, the Xieng Khouang Provincial Public Health held a ceremony on 18 August to close the first official training of malaria resistance specialized task for their students. There were almost 20 students from various districts within Xieng Khouang Province who participated. Following the study of theory and practice they passed

the examination 100 percent. While they were studying, the provincial public health section organized more malaria study centers to be used in studying and suppressing malaria within their own province effectively and in a timely manner. There is also news that now the Xieng Khouang Provincial Public Health section is preparing necessary equipment for the second specialized task training and to study malaria which will soon be opened. This specialized task training on malaria will promote the network of malaria suppression cadres in each locality so they will steadily increase and can be rotated in suppressing malaria in various localities in order to decrease its incidence and to completely eliminate it. [Text] [Vientiane KHAOSAN PATHET LAO in Lao 21 Aug 84 pp A6, 7] 9884

SARAVANE MALARIA PROBLEMS--In the past 9-month period from January to September the Saravane Provincial Public Health section sent 15 malaria cadres to different production bases in 7 cantons subordinate to [Saravane] District and [Saravane] Province. In this operation they examined and distributed medicine for 4,844 patients, did over 500 hours of checking malaria. They also divided the malaria region into three parts throughout Saravane District: an area of serious malaria covering 56 [percent], a medium-malaria of 33.11 percent, and a low-malaria area covering 8.64 percent. Also suppressing malaria in the bases with the Lao cadres were malaria experts from the SRV, especially from Quang-Nam-Danang, Saravane's twin province, who assisted in training malaria technical cadres for this province. [Excerpt] [Vientiane PASASON in Lao 13 Sep 84 pp 1, 3] 9884

CSO: 5400/4333

NIGERIA

BRIEFS

EPIDEMIC IMMINENT--Major Umar of Federal Housing Authority would have to do something to avert an imminent epidemic in FESTAC Town. Right now the equipment needed to clear the drainage and convert the waste into purified water isn't in working order. There are blocked drainage holes in many parts of the town making the avenues and roads look ugly. Major Umar should please either immediately order for the purchase of the needed equipment or direct the maintenance division to go round the town and clear up the mess. It may interest the chairman to know that some of the workers in this division demand and receive money from tenants before they do their job. To counter this, the chairman should give a time limit to them and with military precision, fire all those not ready to work. [Letter to editor by John Iganba] [Text] [Kaduna NEW NIGERIAN in English 27 Nov 84 p 4]

MEASLES DEATH IN DAURA--An outbreak of measles in Daura Local Government Area of Kaduna State has resulted in death of 22 out of 100 children affected recently. A release signed by an Information Officer at the LGA, Malam Bashir Saleh Daura, said the incident occurred in Dan Nasara Village in Mailaduwa district of the local government area, adding that the head of health and social welfare department, Alhaji Mamman Zango, had confirmed it. It said a combined team of both state government health officials had been drafted to the village to contain the disease through treatment and immunisation of children. The statement further said the Sole Administrator for the Daura Local Government, Mr Bulus James had also appealed to the government for assistance in providing vaccines and drugs for the immunisation of children, while he urged the public to report any outbreak promptly. [Text] [Kaduna NEW NIGERIAN in English 29 Nov 84 p 16]

SICKLE-CELL DISEASE AFFECTS CHILDREN--Thirty thousand children born each year in Nigeria suffer from sickle-cell disease, a professor of haematology at Ahmadu Bello University Zaria, Mr Alan Frederick Fleming has said. Similarly he added 100,000 children in the African continent were born with sickle-cell disease. Professor Fleming made the disclosure while delivering a lecture in memory of the late Dean of the Faculty of Medicine and Head of Department of Paediatrics Ahmadu Bello University Professor Kunle Ijaiya, last Saturday. He said the reason for the large number of sickle cell disease cases among children born in Africa was the high

frequency of sickle "gene" among the people and density of the population. Professor Fleming said medical research carried out in various parts of Africa showed that every person was related to a family who have sickle-cell disease. He added that sickle-cell "gene" originated from the Gulf area and later spread to India, Western Asia, Turkey, Greece, Sicily and Portugal while in Africa it started from the beginning of the historical evolution of man. Furthermore he said governments could minimise or eradicate the disease totally by educating the entire African populace and provide early diagnosis which was simply by establishment of sickle-cell hospitals. Good nutrition and complete eradication of malaria could also help in the prevention of the disease the professor maintained. [Text] [Kaduna NEW NIGERIAN in English 28 Nov 84 p 5]

WARNING ON WATER-BORNE DISEASES--Communities in Awgu Local Government areas have been warned to always boil their drinking water in order to avoid water-borne diseases. The warning was given by the Principal Health Superintendent for Awgu Local Government Mr L.O. Ozobu at a lecture on sanitation given to the Ogboli Ndiagu Community. Mr Ozobu attributed the prevalence of guinea worm, similium, damonsuim and other water-borne diseases to lack of adequate sanitation. He said that the fact that the diseases are common during the dry season showed that they are caused by drinking impure water. Mr Ozobu then asked the Ogboli Ndiagu community to take adequate care of the Ikem stream which is the source of water supply during the dry season. [Text] [Lagos DAILY TIMES in English 8 Dec 84 p 20]

CSO: 5400/45

PEOPLE'S REPUBLIC OF CHINA

## PROGRESS ON EPIDEMIC HEMORRHAGIC FEVER REPORTED

Beijing ZHONGHUA NEIKE ZAZHI [CHINESE JOURNAL OF INTERNAL MEDICINE] in Chinese No 7, 20 Jul 84 pp 438-441

[Article by Yu Danping [0060 0030 5493] of the Infectious Disease Teaching and Research Station, Harbin Medical College First Teaching Hospital]

[Excerpts] Research work on epidemic hemorrhagic fever (hemorrhagic fever, for short) has made quite rapid headway, and in 1981 the author reported on developments in clinical research abroad.<sup>1</sup> The current article introduces certain problems in recent clinical research and, for reference purposes, reports on the state of our efforts.

### I. The State of Domestic Research

#### A. Research on the Type III Allergic Reaction

After Wang Jiarui [3769 0857 3843], et al. reported on the conduct of immunological pathogenetic research and the use of cyclophosphamide therapy for hemorrhagic fever, several Chinese units in succession conducted extensive research into the immune function and carried out immune regulatory treatments. Research verifies that hemorrhagic fever is characterized by marked disruption of the immune function, lowered cellular immune function, humoral immune hyperfunction, lowered serum complement content and circulatory immune complex. The use of immunofluorescence, enzyme tagging techniques and electron microscopic examinations of cadaver glomerular basement membranes and renal tubules have all confirmed the presence of immune complex sedimentation, as well as that the above immunologic changes are a regular feature of the disease course. The combined clinical characteristics tend to indicate both that the pathogenesis of this illness lies in immuno-pathologic damages brought about by immune complex, and that it is a type III allergic reaction. As soon as there is immune complex sedimentation in the blood vessels and glomerular basement membranes and when the complement system has been activated, various factors are released (chemotaxic factors, anaphylatoxin, vaso-active substances and so forth) that aggravate damage to the blood vessels and result in hypotensive shock due to the exudation of a large quantity of blood plasma. The varying degrees of glomerulonephritis, which are brought about by immune complex sedimentation in the glomeruli and the glomerular blood capillaries, and the simultaneous complex-activated

complement cause neutrophil leucocytes in the process of phagocytosis to release lysosomes, and this damages the glomeruli and renal tubules. The immune complex combines with thrombocytes or erythrocytes and causes the assemblage and destruction of the thrombocytes. This leads to an abrupt drop in thrombocyte number and an obstruction of their function, thus resulting in hemorrhage. When the thrombocytes are destroyed, coagulant factors, vaso-active substances and so forth are released, causing increased penetrability of the blood vessels, exudation of blood plasma and DIC formation, thus resulting in extensive hemorrhaging.

#### B. Research on the Type I Allergic Reaction

Because there is ample basis for the above type III allergic reaction, that explanation has already been endorsed by many scholars. However, circulatory immune complex usually appears after 3-4 days of illness. Some Chinese scholars observe that C<sub>1</sub> activation is most intense on the 5th and 6th days of illness, consistent with the occurrence of hypotensive shock. In certain patients examined on the 4th day of illness C<sub>1</sub> activation is not yet evident. These patients, entering the hospital at an early stage, already show such signs of blood capillary damage as temulent appearance, chemosis and so forth. This is obviously not caused by the classic route of activation, though some scholars explain it as activation by a circuitous route, because it does not rely on direct C<sub>1</sub> activation by antigen-antibody complex or by antibodies, viruses or their toxenzymes and lysosomal enzymes. However, these cases are in the minority. In addition, based on clinical observation, the clinical forms of hemorrhagic fever are not at all consistent; the progress of mild and severe cases may be completely different. Many years of experience bear out that correct early treatment can block or mitigate pathological damages and that the use of immunosuppressive therapy can notably alleviate renal injury. Consequently, some believe that the early-stage symptoms of hyperpyrexic toxicosis and the patients' notable temulent appearance, severe exudation and gastrointestinal symptoms, as well as the rapid appearance and early disappearance of the above symptoms and the early-stage strand-like hemorrhage sites, are factors completely different from the late-stage phenomenon of hemorrhaging. Rather, they believe these to be a clinical manifestation of an extreme form of histamine toxicosis. Thus, Wang Wenyu [3769 2429 7411] and others in our research group leave the question open as to whether there is still a basis for the possible existence of a type I allergic reaction, and they have also conducted research into the early-stage release of anaphylactic media.

##### 1. Research Into the Dynamics of Serum IgE Levels

In 1983, Wang Wenyu, et al.<sup>6</sup> used the filter-element method radioimmuno-adsorption trial to observe a total of 45 cases of hemorrhagic fever, with 50 healthy locals acting as the control. The IgE levels of patients at the stages of fervescence, shock oliguria, diuresis and convalescence (G value in ng/ml), were  $161.23 \pm 3.62$ ,  $302 \pm 3.53$ ,  $157.4 \pm 3.26$  and  $109.4 \pm 3.04$ , respectively. Levels were notably elevated during the stages of fervescence and shock oliguria. As compared to the levels for the healthy controls ( $5.35 \pm 3.49$ ), a q-test showed  $P < 0.01$ --a significant difference.

## 2. Serum Mastocyte Indirect Degranulation Test

Tian Jingxian [3944 2529 0341], et al. dripped patient serum into the abdominal cavities of white rats, took smears of the exuded anti-IgE and counted the percentage of degranulated mastocytes under a microscope. Altogether, they examined 39 cases in the stage of fervescence, 22 in oliguria, 30 in diuresis, 25 in convalescence and 6 cases at 4 months after recovery. There were also 50 healthy locals acting as the control. The results showed a higher positive rate of indirect degranulation in patients at every stage than in the healthy controls (for whom the count was  $3.25 \pm 2.25$  percent), as follows:  $10.30 \pm 1.85$ ,  $10.50 \pm 2.05$ ,  $8.84 \pm 1.83$ ,  $8.24 \pm 2.02$  and  $4.25 \pm 2.82$  at each of the above stages, respectively. This is also a significant difference ( $P<0.01$ ). This proved that at the onset of hemorrhagic fever it is possible for there to be a type I allergic reaction.

## 3. Determination of Circulating Adenosine Monophosphate (C-AMP) Levels in Blood Plasma

Ma Yingji [7456 5931 7535], et al. employed protein competition coordination methods, used the unit reagent produced by Beijing Institute of Nuclear Energy for C-AMP determination and consulted Cilimm's method to conduct tests assaying radioactivity in a liquid scintillation apparatus. Finally, they determined the blood plasma C-AMP contents along the standard curve. They assessed 45 cases and contrasted them with 23 healthy people. The resulting blood plasma C-AMP for healthy people was  $0.924 \pm 0.26$  pmol/40  $\mu$ l. The blood plasma C-AMP level for hemorrhagic fever patients at every stage was found to be lower than that of healthy people, as follows:  $0.405 \pm 0.25$  at the stage of fervescence;  $0.290 \pm 0.08$  at oliguria;  $0.429 \pm 0.26$  at diuresis and  $0.370 \pm 0.19$  at convalescence. The q-test showed  $P<0.01$ --a significant difference. In a type I allergic reaction, sensitized allergens combine with mastocyte IgE, C-AMP production is curtailed and the decrease in C-AMP promotes the release of histamines.

## 4. Serum IgE Content, Plasma C-AMP Level and the Rate of Positive Indirect Serum Degranulation

Coherency shows that serum IgE levels for patients at all stages run parallel to the dynamic curve of the rate of positive indirect serum degranulation. This forms a positive correlation, the correlation coefficient  $r$  being equal to 0.892. However, there is a negative correlation with blood plasma C-AMP levels, the correlation coefficient  $r$  being equal to -0.677.

## 5. Serum Histamine Fluorimetry

Wu Changyou [0702 1603 2589], et al. consulted Shore's method of fluorescent photometry and assayed a total of 39 cases of hemorrhagic fever at all stages, using 16 health people as a control. The result for healthy people was an average serum histamine content of  $0.18 \pm 0.06$   $\mu$ g/ml, whereas the average contents in hg patients was  $0.24 \pm 0.14$  in fervescence,  $0.34 \pm 0.21$  in oliguria,  $0.33 \pm 0.20$  in diuresis and  $0.30 \pm 0.16$  in convalescence.

Using the t-test to process this information, with the exception of the stage of fervescence all stages showed a significant difference or a highly significant difference ( $P<0.01$ ).

Observation of the dynamics of IgE levels in hemorrhagic fever patients indicates that even though IgE content and the rate of positive mastocyte indirect degranulation trials have increased distinctly beginning with the early stage of onset, by contrast, C-AMP levels have distinctly declined, running parallel with the progress of the disease course and the development of disease stages. Moreover, the release of histamine media in the blood plasma of patients points out that a type I allergic reaction can play a part in the early stage of hemorrhagic fever onset. Consequently, IgE is possibly one of the major factors in bringing about damages from the illness in its early stage. Moreover, histamines can play an important role in bringing about immune complex illness by increasing the penetrability of blood vessels.

At the same time, Li Xiangzhong [2621 4161 1813], et al. of our research group conducted electron microscopic observations of dermal biopsies from 18 early-stage patients. In the early stages of hemorrhagic fever the microangiia at the sites of dermal hemorrhaging show no signs of notable organic damage, blood vessels become dilated, the basement membranes of endothelial cells do not yet appear to be destroyed and there is not yet any evidence of the DIC phenomenon or of immune complex sedimentation. Preliminary results show that the blood vessels in the early stage of the disease course undergo primarily functional changes. This seems to support the argument for type I allergic reaction changes. The above preliminary results and views must await further testing and verification.

### C. Research on the Type II Allergic Reaction

1. In order to observe the association of immune complex granular sedimentation and linear sedimentation in renal tissue and to probe further into the pathogenesis of hemorrhagic fever, Xu Manfen [6079 5585 5385], et al.<sup>7</sup> used immunoenzymological histochemical methods to make further observations of renal immune complex. The kidneys were removed from the cadaver of a 33-year-old male who had succumbed to a classic case of hemorrhagic fever. The patient had died due to perfusion reaction on the 4th day of illness. The postmortem examination revealed pathological changes specific to hemorrhagic fever. Immunohistochemical examination showed classic IgG complex granular sedimentation and C<sub>3</sub> complex granular sedimentation in the renal tissue. At the same time it revealed IgG lining the basement membranes of the renal tubules, and, most importantly, it showed the basement membranes of the proximal lateral tubules to be forming a pattern of linear sedimentation. IgG sediment generally stains dark brown or brown, with evenly distributed color. Around the tubules it becomes semicircular or mostly circular, with some forming tiny lines. The contours of linear sedimentation are clear and compact. Anti-IgG blocking trials also displayed positive results, while the sheep serum control results were negative.

The linear IgG sedimentation that is seen in the basement membranes of the renal tubules indicates that there is a simultaneous transformation that acts against those membranes. In the organism the antibody-against the basement membranes of renal tubules has formed a type II allergic reaction.

## 2. Autoantibody Checks

In 1981 Yang Weisong [2799 3634 2646], et al.<sup>8</sup> conducted autoantibody checks on hemorrhagic fever patients. The method used was to make frozen sections of fresh white rat liver, kidney colon, cardiac muscle and other tissues, and to use indirect fluorimetry to check for antinuclear antibodies and antibodies to smooth muscle, glandular granulae, basement membranes, cardiac muscle and so forth. If any checks were positive, varying degrees of yellow or green fluorescence could be seen. Altogether, 140 cases were checked, and 112 cases, or 80 percent, tested positive for autoantibodies. At each stage of development the most frequently observed autoantibodies were antibodies to basement membranes (34-50 percent) and to cardiac muscle (25-50 percent). It is believed that the antibodies to cardiac muscle arise from antigens released after damage to the cardiac muscle, and the antibodies to basement membranes are autoantibodies of the blood capillary basement membranes of the glomeruli and pulmonary alveoli. Immunopathology verifies that basement-membrane antibodies are a major cause of nephritis and pulmorenal syndrome (a type II allergic reaction illness). In 1982 Xing Guanghui [6717 0342 6540] also advanced the same opinion with regard to autoantibody formation. Xu and Yang both believe that the reason a type II allergic reaction takes shape is possibly due to viral action on antibodies and the formation of autoantigens by the antibody tissue, which then stimulates the formation of autoantibodies. The viral infection changes the tissue antibodies of the host and results in autoimmunity damages. Consequently, these scholars initially considered that the autoimmune reaction might have a hand in organism injury. In addition, in 1983 Xu Zhaoyue [1776 5128 8819], et al.<sup>9</sup> checked patient thrombocyte and erythrocyte smears while conducting a study of pathogenesis. He used indirect immunofluorescence examinations and antibody blocking trials to study the results. He also suggested that hemorrhagic fever is an immunopathy associated with a type II or type III allergic reaction.

To sum up, current research in China and abroad all deems that the host immune reaction is unusual even if an allergic reaction can play a major role. The early stage affection of micrangiia in this disease initiates a basis for a link with indirect damages caused by a previously undiscovered virus, and virusemia factors cannot be ruled out. According to indications in the past 2 years of research, a type I allergic reaction may play a role in the early stage of disease onset. The type III and type I allergic reactions are very closely related, and the type I allergic reaction promotes immune complex sedimentation. It appears that we can consider the early-stage type I allergic reaction to be the forerunner of hemorrhagic fever, with the type III forming to succeed it. In addition, we cannot rule out a role for the type II allergic reaction in hemorrhagic fever pathogenesis.

## II. Diagnostic Methods

When there are no exceptional diagnostic conditions it is completely possible to make a clinical diagnosis of hemorrhagic fever based on a comprehensive analysis of epidemiological data, clinical manifestations and routine laboratory examinations (primarily routine urine tests and blood leucocyte and thrombocyte counts).

In 1982 Junichi Kawamata, et al.<sup>10</sup> proposed clinical diagnostic indicators for Korean hemorrhagic fever, as follows: 1) Chills and trembling accompanied by sudden fever; 2) a sudden break in the fever after 3-7 days (averaging 5 days) of continued fever is the peculiar pattern of fervescence; 3) protein in the urine at its highest level around the 6th day of illness and gradually decreasing thereafter; 4) a reduction in leucocytes on around the 3d day of illness and a corresponding increase in lymphocytes on about the 6th day, as well as the appearance of abnormal lymphocytes; 5) an increase in the levels of serum glutamic-oxaloacetic transaminase, glutamic-pyruvic transaminase, lactic dehydrogenase and creatine phosphokinase; 6) detectable megakaryocytes in the urinary sediment by the 3d day of illness.

Aside from the basic diagnostic indicators, the relevant characteristics of hemorrhagic fever, as well as those features which provide the major clues to diagnosis and those which should be consulted in diagnosis, were also suggested. The nonspecificity of the above indicators explains why clinical manifestations and general laboratory examinations are relied upon for diagnosis both in China and abroad.

In the wake of the discovery of antigenic substances and the advances in virus isolation work, specific laboratory diagnostic methods are already in wide application. In China and abroad, the following types are used: 1) Lung tissue from infected black-striped ji [1213] mice or from black-striped ji mice from the epidemic area is subjected to immunofluorescence. That which reacts positively to the serum of convalescent patients is selected out to make antigens for assaying serum antibodies in hemorrhagic fever patients. 2) Lung-cancer cell cultures (A549) from virally inoculated humans are used to make antigens, and indirect immunofluorescence trials are made on patient serum. 3) Using purified specific antibodies, indirect immunofluorescence trials are applied to determine the corresponding antigens in patient serum.

In 1983 Zhang Chengwen [1728 2052 2429], et al.<sup>11</sup> used epidemic hemorrhagic fever virus from black-striped ji mice not of the epidemic area, mouse-lung antigen transmitted through 15 generations and Vero-E<sub>6</sub> cell antigen, and was able to make early-stage diagnoses of this illness, especially of non-classic cases, with the results of 483 serum antibody checks from 95 patients. The checks demonstrated that anti-IgM could be detected as early as 1 day after the onset of illness, its highest positive rate occurred between the 3d and 14th days of illness and it decreased gradually thereafter. It could still be detected in 8 out of 17 cases (47 percent) between the 116th and the 183d days, though the titer was 1:10 and the

intensity of fluorescence was weak. Anti-IgG could be detected as early as the 2d day after onset of the illness, it rose gradually between the 4th and 5th days, the positive rate reached its peak between the 7th and 14th days, and it could still be detected between the 116th and the 118th days. Anti-IgG detection and titer increase have been reported even earlier abroad. Consequently, anti-IgM and anti-IgG checks can be regarded as early-stage serodiagnostic methods. Also in 1983, Qi Tianmao [1477 1131 5399], et al.<sup>12</sup> used immunoenzyme staining experiments to check 63 early-stage patients, with a positive rate of 85.71 percent. The specificity of this method is quite high and preliminary indications are that it can be used in early-stage diagnosis of hemorrhagic fever. The Department of Contagious Diseases, Xi'an Medical College First Teaching Hospital, used circular sedimentation reaction experiments to conduct early-stage diagnostic research, with a positive rate of 75 percent. This can be detected as early as 2-3 days into the disease course and can be regarded as one method of early-stage laboratory diagnosis.

### III. Clinical Typing

According to reports, hemorrhagic fever exists in three epidemic types, each type having different epidemic characteristics (host animal, epidemic arena, season, etc.) and divergent clinical manifestations.

#### A. Rural Type (Feral-Mouse Type)

The symptoms of fever and toxicosis are severe in this illness and hemorrhaging phenomena and renal injury are notable--particularly the renal injury is quite severe. In the course of the illness oliguria or anuria appear in more than half of the cases and the majority (85-94.83 percent) of cases have distinct hematuria. Combined symptoms are frequent and the average death rate is higher than 5 percent.

#### B. Urban Type (Domestic-Mouse Type)

The state of illness in this type is rather mild. Masata Tamura<sup>13</sup> reports that the clinical symptoms of 63 cases that occurred in Osaka, Japan were nearly all mild. Their major manifestations occurred in the stages of fervescence and albuminuria, and the majority of cases had completely recovered in 10-14 days after the onset of illness, with no sequelae.

#### C. Laboratory Infection Type

Toshihiko Takeuchi, et al.<sup>5</sup> has reported slight clinical symptoms in Japanese laboratory animals and lab personnel that have contracted the disease. Patients all experience fever, symptom relief after fever has broken and slight symptoms of albuminuria, oliguria and hemorrhaging. There is no severe obstruction of renal function but hepatomegaly is seen frequently and hepatic function is completely abnormal.

The mild type of hemorrhagic fever that began to be discovered here in Henan, Shanxi and other regions in the spring of 1981 is the same as the

Japanese urban type hemorrhagic fever. The existing epidemic area is continuing to expand. Most reports indicate rather mild symptoms, short disease course, average hospitalization period of 9.8 days and low death rate.

In view of the fact that the concept differentiating the disease types into a rural/urban typology or a severe/mild typology is unclear, the National Symposium on Hemorrhagic Fever Control Work, which was convened in Anhui in October of 1983, combined these two typologies under one name, calling them feral-mouse type and domestic-mouse type, respectively.

#### IV. Combined Diseases

It is combined heart failure and pulmonary edema in the course of hemorrhagic fever that is one of the major factors causing death. In the past few years, as a result of intense clinical observation and patho-anatomical discoveries, cases of induced acute respiratory distress syndrome (ARDS) have occurred frequently. For example, Liu Shuxiong [0491 2885 7160] has reported 28 cases and Lu Mingcheng [7778 2494 6134] has reported 6 cases. Manifestations of breathing distress, cyanosis and pulmonary rale appear frequently in the course of severe cases with low blood pressure or oliguria, most of which were formerly diagnosed as heart failure and pulmonary edema. Although various measures have been applied, including cardiotonics and diuretics and so forth, the treatments are as yet ineffective and the death rate is rather high. In reality, a portion of these are ARDS, and we should attach sufficient importance to this fact.

Abroad, reports of combined spontaneous renal ruptures in the course of hemorrhagic fever are rather common. For example, in the 50 cases observed by Voyno-Yasenyetskiy<sup>14</sup> there were 8 cases of this type (representing 16 percent). He also reported that postmortem examinations revealed that spontaneous renal rupture had been the direct cause of death of 15.2 percent of the hemorrhagic fever deaths. It is thus clear that this has a high rate of occurrence and that the prognosis under these circumstances is poor. In the past couple of years there have been successive reports of this in China as well, for example, Zheng Delian [6774 1795 5114], Zhao Chengli [6392 2052 7812], He Ming [0149 2494] and so forth, have each reported one case.

#### V. Treatment

In the past few years we have used immunoregulators such as cyclophosphamide, cytidine arabinoside, transfer factors, phytohemagglutinin and so forth achieving a certain curative effect.

##### A. Cytidine Arabinoside

Cytidine arabinoside is a pyrimidine antimetabolite drug that has important antiviral and immunosuppressive effects. In addition to its possible effect of viral suppression, it also reduces antibody production and immune complex formation through the suppression of B cells. In 1983, Cui Shi [1508 5535], et al., of our research group, treated 100 cases of hemorrhagic fever with

cytidine arabinoside in his study of pathogenesis. He also used 100 cases as a control. The resulting conspicuous effects of cytidine arabinoside were as follows: 1) General symptoms of toxicosis improved rapidly and body temperature fell within 24 hours or so of medication; 2) the overall rate of skipped stages in the disease course reached 96 percent, a notable difference from the control group ( $P<0.05$ ); 3) rapid disappearance of albuminuria; 4) relatively mild disease state and low death rate. A simultaneous development determined immunologic indicates. Cytidine arabinoside can affect the humoral immune reactions of patients, suppress immune complex formation and also increase the effects of C-AMP.

#### B. Calf Thymosin

Xing Guanghui [6717 0342 6540], et al.<sup>15</sup> used calf thymosin to treat 35 cases, leaving 26 cases as a control. Through clinical observation and immunologic checks, he discovered that calf thymosin has a prominent effect in strengthening patient cellular immune functions, and it also can promote and accelerate patient convalescence.

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PEOPLE'S REPUBLIC OF CHINA

## KESHAN DISEASE DISCUSSED

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[Article by Yang Dingyi [2799 7844 7328] of the Internal Medicine Teaching and Research Facility at Xi'an Medical College's First Teaching Hospital: "Keshan Disease (Endemic Myocardiopathy)"]

[Text] Keshan disease is a kind of endemic cardiomyopathy of as-yet-unclear etiology. Pathogenetically, Keshan disease has distinct characteristics of regional distribution, temporal distribution and group clustering. The presence of myocardial degeneration, necrosis and fibrosis leads to a lowering of systolic function in the myocardium that is clinically manifested as pump exhaustion (acute or chronic incomplete cardiac function). In October of 1982, the National Conference for the Exchange of Experiences in Keshan Disease Control deemed that, based on the classification of cardiopathies made by the WHO/ISFC Commission at their 1980 Paris conference, at present Keshan disease is one of the unclassifiable cardiopathies.<sup>1</sup>

### I. Epidemiology

The epidemiological characteristics of Keshan disease are as follows:  
1) It can be found in 14 Chinese provinces, cities and autonomous regions distributed within a long, narrow belt extending northeast to southwest from Heilongjiang to Yunnan. 2) The disease region is primarily distributed in hilly and mountainous areas. 3) There is a differentiation between years of high-incidence and low-incidence. In the north, acute Keshan disease occurs primarily during the cold season, while in the south, in Yunnan for example, it can occur all year, though incidence is more concentrated in the summer and fall. 4) In the north Keshan disease strikes mainly at women of childbearing age, whereas in the south it is seen mostly in weaned preschool children of either sex. 5) Outsiders can develop the disease after living for 3 months in the disease area.

### II. Etiology

As of today, the etiology of Keshan disease is still unclear. There are currently two theories on the subject: one that postulates biological etiology and one that postulates biogeographic chemical etiology. The

former holds that this disease is a kind of virally induced natural malady of epidemic origin. An enormous amount of research work has revolved around this question, but at present further research is considered necessary before the role of the virus in Keshan disease can be determined. The latter theory holds that the geochemical composition of the Keshan disease area is unusual, and that myocardial damage is brought about by a deficiency of certain trace elements such as selenium, molybdenum, magnesium and so forth in the drinking water, grain and other foods, or by the lack of other nutrients in the food.

#### A. Selenium Deficiency

Researchers in the 1960's took note of the fact that a lack of usable selenium in the soil and fodder of a region can induce white muscle disease in livestock. There are many similarities between Keshan disease and white muscle disease in terms of etiology, clinical manifestations and pathological changes, and this provided major clues for the inquiry into the etiology, prevention and cure of Keshan disease. Subsequent measurement of the selenium content in disease areas and nondisease areas confirmed that the selenium content of water and grain in disease areas, as well as levels of blood selenium and selenium generation among the residents of disease areas, all are lower than in nondisease areas. The use of oral sodium selenide was undertaken to prevent Keshan disease, and positive results were achieved.<sup>2</sup> Consequently it is believed that a condition of low selenium in the environment within or without the disease area can play a major role in the incidence of Keshan disease.

For many years now, the results of research into the pharmacological and physiological nutritive aspects of selenium with respect to the heart have shown that selenium deficiency can cause myocardiopathic change. A selenium preparation in the appropriate amount has an obvious protective function in experimental myocardial infarction, ischemia, anoxia and some other experimental myocardial damages.<sup>3</sup> In recent years, there have also been isolated case reports of westerners who have experienced Keshan-like myocardiopathic complications due to selenium deficiency.<sup>4</sup> Therefore, there is reason to believe that there is an intimate relationship between a condition of low selenium in an organism and myocardiopathic change.

The mechanism by which selenium deficiency leads to myocardial damage is as yet unclear. The following are possible mechanisms:<sup>5</sup> 1) The primary physiological function of selenium is accomplished in the form of glutathione peroxidase, which eliminates the destructive effect on cell membranes of the peroxide that is produced by oxidation of unsaturated lipids in the body. Under conditions of selenium deficiency, supplemental selenium can reinforce enzyme activity and contribute to a comprehensive defence of the cell membranes. 2) Some data indicate that antibody formation and the bactericidal abilities of polymorphonuclear leucocytes are lowered in selenium-deficient animals. Supplementation of suitable selenium can alter this situation and therefore enhance the organism's resistance to the microorganisms involved in Keshan disease. 3) Some people believe that selenium can counteract the harmful effects of some heavy metals and biotoxins on an

organism, and that supplementation of selenium may enhance the resistance of the organism to toxic materials that can produce myocardial damage.

4) Virally induced cardiopathic change has a certain relationship to an animal's blood selenium level, and supplemental sodium selenide can reduce myocardial sensitivity to viruses.

It must be pointed out that, in light of the epidemiological characteristics of Keshan disease, we cannot explain its occurrence solely by selenium deficiency because in adjacent disease areas with correspondingly low selenium there may yet be no incidence of Keshan disease. Thus we must consider that there are some other additional factors involved in this process. Some scholars have raised the following conjecture:<sup>6</sup> Natural environmental factors + correlated factors + induced factors → disease incidence. Environmental factors are basic: the lack of selenium is perhaps the major factor producing cardiopathic change, and the protective effects of selenium also possibly indirectly mitigate the pathogenic effects of other factors in the natural environment. Correlated factors may arise from foods or from the effects of enhancement or abatement of selenium deficiency or other factors in the natural environment of the disease area or nondisease area. Induced factors are nonspecific, including such things as atmospheric temperature changes, hygiene conditions, biotoxins, emotional agitation or gluttony.

#### B. Nutritional Environmental Etiology

It has been observed everywhere in China that the use of grains and vegetables from disease areas to raise white rats results in slowed growth, shortened average life expectancy, a relative increase in heart weight and a high rate of pathological change in the myocardial parenchyma among these animals. When contrasted with animals raised on grains and vegetables from nondisease areas there are obvious differences, and this illustrates the existence of factors in disease-area grains and vegetables that can damage the myocardium in animals and affect growth. In addition, animals raised on various mixed fodders in the same disease area have a lower positive rate of myocardial damage when compared with those that are raised solely on corn as their primary fodder. The results of these studies reflect that, with respect to the background of natural environmental factors in the disease area, human contraction of Keshan disease is associated with the various components of the food.<sup>7</sup>

#### III. Pathological Change

Chinese scholars have conducted nearly 1,700 autopsies on Keshan victims. Through photological and electron microscopic observation they have conducted thorough pathological studies of different types and different age groups, and have acquired a quite comprehensive understanding of Keshan disease. In the past few years endocardial and myocardial biopsy techniques have been used, drawing upon observation of right ventricle specimens of patients with chronic and latent Keshan disease. What is seen through photology and microscopy is not essentially different from the results of autopsies. Under the electron microscope the spread of intercalated discs,

the focal accretion of chondriosomes, the dissolution and disappearance of a small number of swollen, ridge-shaped chondriosomes, a thickening of myofibrillae and a phenomenon of abnormal branching and of severance, separation and dissolution of small focal muscle fibers can be seen reflected in the degenerative metamorphosis of the cell.<sup>8</sup> However, because the number of observed cases is small, the selection of materials is limited to the right ventricle and there is still a lack of data on acute and subacute patients, research in this area must await further perfections.

#### IV. Circumstances and Typology of Disease Onset

In the past few years, through comprehensive prevention measures such as improvements in housing conditions and nutrition, avoidance of induced factors and provision of oral sodium selenide, the incidence rate for Keshan disease has dropped distinctly. For example, in the northern 11-province Keshan disease area, 23 years of continuous pathographic data demonstrate that in its highest year the incidence of acute and subacute infection was 6 per 10,000. By 1981 it had fallen to its lowest historic level: 0.36 per 10,000.<sup>9</sup> However, chronic Keshan disease still occurs in the disease area, and it is worthy of note that the majority of patients in the last 20 years have been children.

Clinical typologies of Keshan disease have been carried out in various different decades. In 1982 the National Conference for the Exchange of Experiences in Keshan Disease Control compiled the latest revision and made certain improvements. The current typology is as follows:

A. Acute type: Characterized by acute, sudden onset; can also arise from acute episodes of latent or chronic Keshan disease. Where there is cardiogenic shock, pulmonary edema and other acute manifestations of incomplete cardiac function, or where there is serious arrhythmia, the condition is considered grave. Where there are symptoms and signs of cardiopathy but the grave manifestations mentioned above do not occur, the condition is considered mild. Enlargement of the heart is generally not evident in patients of this type, but arrhythmia is both common and correctable. In cases of arrhythmia, premature ventricular palpitation and paroxysmal tachycardia occur frequently from various causes and are considered the most common types. Approximately one-third of all patients have a complete atrioventricular blockage, and consequently there are many patients with cardiocerebral syndrome. Pulmonary edema is seen more frequently in children under 6 than in adults.

B. Chronic type: Onset is slow and occurs without patient awareness, thus it is also called "natural chronic" although it can also arise through three other types of transformations. This type can occur year round. Patients' hearts are moderately or distinctly enlarged, cardiac function is between levels II and IV, and as a consequence the primary clinical manifestation is chronic congestive heart failure. Where acute manifestations appear in chronic cases of Keshan disease it is termed chronic-type with acute onset. Where recovery from subacute Keshan disease does not occur within 3 months of disease onset, it is also called chronic-type Keshan disease.

C. Subacute type: Onset is not as rapid as it is in the acute type. Generally, cardiogenic shock and/or chronic congestive heart failure, more frequently the latter, occur about 1 week after the appearance of symptoms. Patient facial edema, hepatomegaly, galloping heart rhythm heard through the stethoscope and arrhythmia occur less frequently than in acute-type Keshan disease. This type occurs more frequently in weaned preschool children. In the southwest disease area anywhere from 2-30 percent of the children with subacute Keshan disease develop cerebral, pulmonary or renal embolisms, to the extent that in some patients embolism is considered a symptom of the onset of disease and a cause for immediate hospitalization.

D. Latent type: Commonly, no discernible symptoms are evident, heart functioning is at level I and there is no history of acute, chronic or subacute types of the illness. However, where there is premature ventricular palpitation or complete dextral bundle blockage, it is known as stable latent-type Keshan disease. Where there is a history of acute, chronic or subacute infection, or where there is an ST-T [blood type] shift or a lengthened Q-T interval, it is called unstable latent-type Keshan disease, and it requires enhanced supervision and close observation.

#### V. Diagnosis and Differential Diagnosis

In light of the epidemiological characteristics of Keshan disease, in the disease area diagnosis is not difficult. With the exception of the latent type, all patients of Keshan disease have symptoms and signs of varying degrees of heart enlargement and of incomplete cardiac function, as well as various sorts of arrhythmia. By coordinating electrocardiograms, X-rays and other examinations, diagnosis can generally be made. In 1982 ultrasonic cardiograms and vector cardiograms [xinjitu 1800 2894 0956], as well as laboratory examinations were added, further perfecting diagnostic indices.

The following illnesses must be distinguished from Keshan disease:

A. Acute gastritis or other acute abdominal ailments: Some children with acute or subacute Keshan disease commonly experience frequent nausea, vomiting, abdominal pain and other digestive tract symptoms, sometimes to the point that they begin to vomit up ascarids. Consequently, Keshan disease must be distinguished from gastritis, ascariasis and so forth. If cardiac signs and the course of onset are heeded, differentiation is generally not difficult. When necessary, vitamin C and so forth can be used as an experimental treatment to assist in differentiation.

B. Myocardiopathic dilatation: Adult chronic Keshan disease is very similar to myocardiopathic dilatation. Differentiation is rather difficult and it is even more difficult in the disease area. Combining the epidemiological characteristics of Keshan disease, the following points may be consulted: 1) Age: Domestic Statistics on myocardiopathic dilatation show 70 percent of patients to be over 30 years old, whereas Keshan disease occurs more frequently in women of childbearing age and children. 2) Sex: Myocardiopathic dilatation occurs more frequently in males; the male/female ratio is 1.9:1.<sup>10</sup> Keshan disease is more common among females. 3) Keshan

disease occurs primarily among the self-sufficient farming population; even in the disease area the nonfarming population rarely contracts it. Myocardiopathic dilatation does not share this characteristic. 4) The disease course of chronic Keshan disease is slower than that of primary myocardiopathic dilatation. 5) In the northeast and northwest, Keshan disease is often prevalent in the same disease area as is osteoarthritis deformans. Thus, attention to the presence or absence of osteoarthritis deformans in the patient is of assistance in differentiating Keshan disease from myocardiopathic dilatation. 6) Biopsy of endocardial heart muscle should provide an important basis for differentiating the two.

C. Rheumatic myocarditis: In some cases of chronic Keshan disease, when systolic heart murmur appears due to heart enlargement and the enlargement becomes evident in the sinistral atrium and ventricle, then the disease is easily confused with mitral insufficiency. Due to the presence of an early diastolic interval and a pre-systolic gallop rhythm, some patients also might be mistakenly considered to have a systolic murmur, and then it is even easier to misdiagnose the problem as mitral stenosis. Confusion of the two is mitigated by the following points: 1) epidemiological characteristics; 2) Keshan disease heart murmur may be intermittent; 3) patients with rheumatic myocardiopathy often have other manifestations of rheumatic activity; 4) the differences between the two can be detected by ultrasonic cardiogram.

#### VI. Treatment

The different types of Keshan disease rely upon different treatment principles. Curative effects have been better in recent years than they were in the past.

A. The treatment principle for acute Keshan disease is to discover, diagnose and treat the problem early, actively correct acute incomplete cardiac function and strive to prevent conversion into chronic Keshan disease. Specific treatments are as follows: 1) Large doses of vitamin C given by intravenous injection brings about a clinical cure in more than 80 percent of patients. Aside from its use as an emergency treatment for cardiogenic shock, vitamin C is also used to treat complete atrioventricular blockages and paroxysmal tachycardia. This medication is not very effective when administered by intravenous drip, thus it requires intravenous injection. In addition, where there is obvious congestive heart failure, a smaller quantity should be used because the sodium pyrosulfite contained in the injection fluid might affect the control over heart failure. 2) For cases of dysphoria and grave illness, sub-hibernation therapy may be provided. Stable intravenous injections also may often be used. 3) In principle, we should not be anxious to use vaso-active medication to raise blood pressure too early. This should only be used if the shock is not in remission by 6 hours after two injections of vitamin C. In addition to aramine and dopamine, phentolamine and noradrenaline are also often effective. 4) If acute pulmonary edema or congestive heart failure and any kind of arrhythmia appear, then corresponding treatments should be undertaken. A vasodilation medication is quite effective and should be used to treat acute or chronic incomplete cardiac function.

B. The treatment principle for subacute and acute Keshan disease includes long-term use of digitalis, rational eating habits and life style. In the early stage, these kinds of patients have a good reaction to treatment with digitalis preparation. On the basis of the patients' conditions and their individual differences, we know for each patient that their pattern of medication administration can be used year round, and we strive to restore cardiac function to level I or to restore the heart to its normal size. For refractory congestive heart failure, a polarized fluid, a vasodilation medication or other positive heart-contracting medication can be tried. For example, treatment with phentolamine often has good results on these kinds of patients. In addition, chronic patients must also pay attention to timely discovery and elimination of various complications that might influence the effectiveness of treatment.

C. With regard to latent Keshan disease we must pay attention to life style and prevention of infection. We should place unstable latent patients under particularly close observation.

Prevention: The use of oral sodium selenide to prevent Keshan disease is accepted by most people. Generally, a dose of medication is taken every 10 days, and the dosage differs based on age: 1 mg is administered for ages 1-5, 2 mg for ages 6-10, 3 mg for ages 11-15 and 4 mg for those 16 and over. Because Keshan disease can strike throughout the year, cessation of medication during the season of low incidence should not exceed 3 months. In addition, we should use selenium-bearing table salt or use selenium in soaking seeds, and we should add selenium fertilizer to leaf surfaces and roots to increase the selenium content of crops. This will alter the assimilation of selenium by inhabitants of disease areas and might achieve the goal of prevention. Improvement of the staple or nonstable foods for inhabitants of disease areas, for example adding 10 percent bean flour to the staple foods can prevent the onset of Keshan disease.

#### FOOTNOTES

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12510  
CSO: 5400/4105

PEOPLE'S REPUBLIC OF CHINA

NEW, EFFICIENT METHOD TO DIAGNOSE SNAIL FEVER

CW241232 Beijing XINHUA in English 1159 GMT 24 Jan 85

[Text] Hefei, 24 Jan (XINHUA)--A doctor here has found a simple, easy and inexpensive method of diagnosing snail fever, a debilitating parasitic disease affecting about one million people in southern China.

The method pioneered by Doctor Qian Jimu, who works in Jingxian County Epidemic Control Station in Anhui Province, examines a sample of blood taken from the patient's ear. In tests on 10,000 people during the past three years, his success rate has reached 95 percent.

The method was easier and more accurate than those previously in use, according to Anhui Province medical experts. The complete examination also required one medical worker, rather than the three or four needed before, they added.

Snail fever was formerly prevalent in 348 counties and cities in southern and eastern China. By last year, it has been eradicated in 250 of the affected counties. The number of people suffering from it also dropped to one million from 11 million.

CSO: 5400/4123

-PEOPLE'S REPUBLIC OF CHINA

YUNNAN ESTABLISHING THIRD VACCINE NETWORK

OW240824 Beijing XINHUA in English 0647 GMT 24 Jan 85

[Text] Kunming, 24 Jan (XINHUA)--Yunnan Province is setting up its third vaccine storage and delivery network to increase supplies to remote and border areas, according to the provincial Public Health Bureau.

When cold storage equipment installations are completed by the end of this year, the network will help provide quality medicines to 32 million people throughout the southwest China province. The two facilities already established in the past two years have helped reduce the incidence of whooping cough in Yunnan by 20.7 percent. Diphtheria was also reduced by 39 percent, infantile paralysis by 1.8 percent, and measles by 2.5 percent, the provincial Public Health Bureau said.

The Chinese Government funded the projects with an investment of 12 million yuan. The United Nations Children's Fund provided two refrigerated delivery vans, 760 refrigerators and teaching aids. There are six more U.N.-assisted services operating in other parts of China. Each reaches about 10 million people.

CSO: 5400/4123

PEOPLE'S REPUBLIC OF CHINA

BRIEFS

ESTABLISHMENT OF LEPROSY RESEARCH CENTER--Guangzhou, 13 Jan (XINHUA)--China will build an anti-leprosy center here to help eliminate leprosy by the year of 2,000. There have been 480,000 recorded cases of leprosy in Guangdong, Shandong, Jiangsu, Sichuan, Yunnan and Guizhou Provinces since 1949. About half had been cured, but one percent suffered relapses, he said. [sentence as received] The new center will guide leprosy research, standardize treatment and preventive measures, and train anti-leprosy personnel for all parts of the country. It will set up a national scientific and technical information office and publish a magazine on leprosy. [Text] [Beijing XINHUA in English 1526 GMT 13 Jan 85 OW]

CSO: 5400/4123

PORUGAL

COUNTRY'S THIRD AIDS CASE CONFIRMED

Lisbon EXPRESSO in Portuguese 22 Dec 84 p 6

[Article by N.V.: "Another AIDS Case Confirmed in Lisbon"]

[Excerpt] The existence of a third confirmed case of AIDS in Portugal was revealed this week in a postgraduate medical class at the Curry Cabral Hospital, a unit of the group composed of the Civilian Hospitals of Lisbon (HCL).

The patient suffering from the Acquired Immune Deficiency Syndrome is a Portuguese, 32 years of age, a homosexual, who lived abroad for 2 years in a country in North America and who has been in the Curry Cabral Hospital since July under the observation of a medical team consisting of Drs J. Melo Vieira, Ferreira de Almeida and A. Filipe Coutinho.

The explanation of this case, which was followed by dozens of young physicians and specialists in patient care, was of particular interest because it is a classic example of AIDS with "demonstration of the presence of the antibody hostile to the virus that has been regarded as responsible for the disease."

The studies that led to the discovery of this third case (the two previous were studied and confirmed by the teams under Drs Carneiro de Moura and Antero de Palma Carlos) were conducted in Portugal and France, with the collaboration of the Lisbon School of Pharmacy and the Pasteur Institute of Paris.

"Recourse to a foreign institution will not be necessary in the future," we were told by Ferreira de Almeida, who added that it is possible to establish the diagnosis of the disease in our country "with the same strict accuracy that is applied abroad."

Although the doctors of the HCL were certain that they were dealing with another case of AIDS, they were, however, unable to establish whether the patient had been infected in Portugal or in the country to which he had emigrated and this is a "hard question that it will be very difficult to ignore."

"Since the maximum incubation period of the disease under study is 36 months and the patient has been out of the country for the past 2 years, it is

practically impossible to pinpoint the place where he contracted the disease", explained Melo Vieira, although he was more inclined to think that the illness was acquired abroad.

**"There is No Cause for Alarm"**

With regard to the foreseeable evolution of AIDS in Portugal, the specialists maintain that "there will be no reason for panic", although they admit that other cases may be detected before long, especially in view of the fact that there now exists a state of major alert focusing on the disease.

"Because of the volume of information already made public, it is very unlikely that a case of AIDS could now pass unnoticed in Portuguese hospitals", says Filipe Coutinho, who reported that according to the statistical average compiled in countries with a socio-economic profile similar to our own (for example, Spain, where there is one case per 2 million inhabitants), Portugal might already be expected to have 5 or 6 duly confirmed cases of the disease.

8089  
CSO: 5400/2513

SWEDEN

WHOOPING COUGH CONTINUES SPREAD, CLAIMS FIRST VICTIM

Stockholm DAGENS NYHETER in Swedish 10 Jan 85 p 8

[Article by Ingemar Lofgren: "Whooping Cough Spreading"]

[Text] The whooping cough epidemic that is spreading through the country claimed its first victim during Christmas, a 2-year old girl from Kalmar. She became the fourth victim since vaccination against whooping cough was halted in Sweden in 1979.

It is estimated that a new vaccine can first be introduced in two years.

The whooping cough, right now, is spreading mainly in Stockholm, Goteborg and the counties of Alvsborg, Vasterbotten and Kalmar.

"It is most important for the parents to try to protect the children, the infants," says the head of the State Bacteriological Laboratory, Professor Lars Olof Kallings to the DAGENS NYHETER.

Anti-biotics can be given to the children, if it is done in time, and if it is known that the child has been exposed.

No Effect

If the cough has already begun, anti-biotics will have no great effect, however. But they may help against complications.

All vaccinations against whooping cough were halted in Sweden in 1979. The imported vaccine, used then, did not give enough protection. Furthermore, it had serious side-effects--one case in one hundred thousand sustained brain-damage.

"Nevertheless, if the parents, for various reasons, want their children inoculated, it can be done if they ask their pediatrician," says Lars Olof Kallings.

The Physicians are Battling

Even if whooping cough now is to be found in the entire country and even if the number affected will increase in the next couple of months, the peak will not equal the one of a few years ago, 1982/83. Whooping cough has a certain periodicity and usually returns every four years. The next big outbreak will be in 1986/87.

Until then efforts are under way to produce an effective vaccine. But the physicians are battling time.

Since October 1984, a Japanese vaccine has been tested on about one hundred Swedish children. The results of that investigation are expected in the spring.

If the tests are successful, the vaccine will be tested on a larger scale, about 3,000 children in 11 places in the country. The results from that investigation will not be ready until 1986/87, i.e. simultaneously with the next major epidemic.

"In order to be on the safe side and be prepared, we have already made a delivery agreement with the Japanese manufacturers. That way delivery is assured if the vaccine proves to be satisfactory," says Professor Kallings.

12339

CSO: 5400/2516

SWEDEN

DIPHTHERIA EPIDEMIC SPREADING FROM GOTEBORG TO STOCKHOLM AREA

Stockholm SVENSKA DAGBLADET in Swedish 14 Dec 84 p 11

[Article by Roger Magnergard: "Two New Suspected Cases of Diphtheria"]

[Text] Two more persons suspected of having diphtheria have been put in the Roslagstull Hospital in Stockholm.

Both work at the same place as the 60-year-old man from Huddinge who was confirmed Wednesday as having diphtheria.

"We have run 130 tests at the place where the infected man works," reports Professor Borje Holmberg of Roslagstull Hospital. "Two of them were positive, and the people are staying in the hospital until we know whether they are infected or not."

The test cultures require 4 days.

Tests are to be run today on the sick man's family. They have been quarantined at home since Wednesday. None of them, however, has any symptoms of the disease.

They are working intensely at Roslagstull Hospital to track down the source of the infection contracted by the sick man.

"We are comparing the bacteria with those from persons who came down with it in Goteborg. If we have any luck, it may show that they are of the same strain."

Holmberg says that there is no reason for alarm. Several people, however, have consulted doctors and asked to be vaccinated. Tests have been run on them to see if they are already immune to diphteria.

9992

CSO: 5400/2511

SWEDEN

BRIEFS

NEW AIDS DEATHS--Another person has now died in Sweden of the dreaded immune deficiency disease AIDS. It was a 35-year-old man who died at the Roslagstull Hospital. Of the 16 in Sweden who have so far been diagnosed as AIDS victims, 8 have now died of the disease. A few hundred other people have symptoms that may be preliminary stages of the disease. [Text] [Stockholm DAGENS NYHETER in Swedish 14 Dec 84 p 11] 9992

CSO: 5400/2511

TANZANIA

BRIEFS

CHOLERA DEATHS--Mwanza--Cholera is reported to have hit Ukerewe District in Mwanza region, again causing five deaths, while six people are still receiving treatment at health centers in the district. A statement released by the regional medical officer, Dr Mtei, said that the disease struck again on 18 January. However, he said that the disease was on the decline in Mwanza region and that the situation was not serious. The regional medical officer accompanied by the nursing officer will leave Mwanza for Ukerewe today, with medicine and other equipment for combating the disease and to investigate the causes of the disease. Dr Mtei has called on the citizens of Ukerewe to stop keeping disease a secret, and to take their sick to hospitals when they detect symptoms of the disease. [Text] [Dar es Salaam Domestic Service in Swahili 1000 GMT 23 Jan 85 EA] Lindi--The office of the regional commissioner in Lindi rushed an emergency shipment of drugs and diesel with doctors to Kilwa District to assist the district to combat cholera, which has claimed the lives of 10 out of 17 people affected in (Kinywanywa-Kipatimu). According to a police signal received in Lindi from leaders of the district, the victims died between Wednesday and Thursday this week. The regional media office told the regional anti-cholera committee that three people died of dysentery in Lindi last Sunday. This is the first official announcement of the disease since it hit the region towards the end of last year. [Text] [Dar es Salaam Domestic Service in Swahili 1700 GMT 26 Jan 85 EA]

CSO: 5400/62

— TRINIDAD AND TOBAGO

STUDY SHOWS HIGH INCIDENCE OF AIDS; FEMALES WARNED

Port-of-Spain TRINIDAD GUARDIAN in English 14 Jan 85 p 1

[Text]

THE KILLER AIDS virus is rampant among male homosexuals in Trinidad and Tobago. While the virus here is still restricted to the male homosexuals population, the evidence of viral infection in 50 per cent of the bisexual group indicates that in due course AIDS is likely to appear in the country's female population. So far 16 people have died in this country from this disease.

This was stated yesterday by Professor Courtenay Bartholomew at the UWI's Medical Update's closing session, as he gave the results of a study of 100 randomly selected "healthy" male homosexuals who were unaware of any illness, until the test were carried out.

Professor Bartholomew said that 43 out of the 100 homosexuals had antibodies to HTLV, the AIDS virus.

Of the 72 who were strictly homosexuals, 30, or 41.4 per cent had antibodies to the AIDS virus, while of the 28 bisexuals, 13 or 50.4 per cent had antibodies to the virus.

He said that the alarmingly high prevalence rate of antibodies to the AIDS virus in the population was of major public health concern in Trinidad and Tobago.

Professor Bartholomew's announcement of the results of the study was made yesterday during a symposium on viruses, cancer and aids which wrapped up the two-day medical discussions.

Among those taking part in the panel discussions was internationally famous Dr. Robert Gallo, the scientist who identified the HTLV AIDS virus. Dr. Gallo is attached to the National Cancer Institute, Bethesda, USA, and delivered the inaugural Emmanuel Amoroso Memorial Lecture. He also received the Amoroso Scientific Achievement Award presented by the UWI. Dr. Gallo's topic was the Virus of AIDS (HTLVIII).

TWO POSSIBILITIES

Commenting on the presence in the population of antibodies to the AIDS virus, Professor Bartholomew said that it could denote one or two possibilities. Firstly, the person may eventually succumb to the virus of AIDS or, secondly, the person may have been exposed to the AIDS virus but had not been affected by it. He may then be a carrier of the virus and while being "healthy" could infect others.

He said that another recent study of blood samples of about 2,000 randomly selected people in Trinidad has shown that HTLV III antibodies were found in less than one per cent in the general population, so that in short the virus of AIDS was still restricted to the male homosexual population.

The study of 100 male homosexuals was done between November 1983 and May 1984 in Trinidad. The team was led by Professor Bartholomew and comprised technicians from the

Haematology Department of the Port-of-Spain General Hospital, the Caribbean Epidemiological Centre (CAREC) under the direction of Dr. Barbara Hull-Drysdale, with immunological studies by Mr. Wayne Labastide and Miss Arlene Darmanie from the Laboratory of Immunology, Port of Spain General Hospital.

#### BISEXUAL TOO

The study was carried out in collaboration with Dr. Gallo and Dr. William Blattner of the National Institutes of Health in America. Dr. Bisram Mahabir and his contact tracers at the Caribbean Medical Centre (CMC) contacted most of the homosexuals for study.

Of the 100 homosexuals studied 96 were single, while 28 were bisexual. Only 11 had contacts with homosexuals from the USA and two had contacts in Canada. The 87 never travelled abroad. Forty had more than 100 different sexual contacts, ten had over 400 contacts and one

had over 1000 different sexual contacts.

Up to November 17, there were 7,408 cases of AIDS in the USA of which 3,498 have died and the epidemic is not waning. In Trinidad the first case was diagnosed in February 1983 and since then 25 cases have been confirmed, but it is believed that this figure is an underestimate of the true picture.

Professor Bartholomew's report gave a comparison between the number of cases of AIDS per million population between the USA and Trinidad and Tobago. The number of cases here is 24 per million and 16 have died, while the figure for the USA is 35 per million population. For the United Kingdom it is 1.0 per million population.

The result of the study, he said, was an indication of the high prevalence of male homosexuality in Trinidad and Tobago and it is noteworthy that whereas in the US, the largest percentage of AIDS cases have occurred in the 30-39 age group, in this country the largest percentage of AIDS cases is the 20-30 age group.

CSO: 5440/033

TRINIDAD AND TOBAGO

EXTENSIVE NATIONAL SURVEY SHOWS HIGH RATE OF HEPATITIS

Port-of-Spain SUNDAY GUARDIAN in English 16 Dec 84 pp 1, 22

[Text]

RESULTS of a survey have shown that there is a very high prevalence rate of hepatitis in Trinidad and Tobago, particularly Hepatitis A.

Over the past two years, research on the disease has been done by a team headed by Professor Courtenay Bartholomew, Professor of Medicine at the University of the West Indies (UWI).

Assisting Professor Bartholomew in this extensive research were Dr. Baruch Blumberg, of Philadelphia, USA, the discoverer of the antigen of the virus of Hepatitis B, which earned him the Nobel prize, and other scientists of the Caribbean Epidemiological Centre (CAREC), Port-of-Spain General Hospital and UWI's Computer Centre.

In the study of the prevalence of hepatitis in Trinidad and Tobago, Dr. Bartholomew and his team found there was no significant difference in the prevalence of the antibody between the various ethnic groups, between males and females or between the urban and the rural dwellers.

They however discovered that the overall crude prevalence (children and adults) of Hepatitis A antibody was significantly higher in Tobago — 52.5 per cent — than in Trinidad where the percentage was 36.4 per cent.

Hepatitis is an infection of the liver which can be caused by any of several distinct viruses.

The survey, the largest population survey of Hepatitis A and B in medical literature, involved some 4,454 people, randomly selected from all areas of the two islands, including 43 schools. The study was done on 2,431 people under the age of 20, and 2,023 people over the age of 20.

In adults over 20 years, past hepatitis infection was found in 70.3 per cent in Trinidad and 95.2 per

cent in Tobago.

Among those 20 years and under, 8.8 per cent had past infection of Hepatitis A in Trinidad, while the figure for Tobago was 9.3 per cent.

The survey team found there was little significant difference in the prevalence rate among the various districts in Trinidad, except for Arima, which showed a somewhat higher infection rate.

Hepatitis B, which is a more virulent type of infection than A, showed a steady increase in prevalence with age, increasing from 7.3 per cent in the 10-15 age group to 52.3 per cent in the over-60 age group.

The overall crude prevalence percentage rate of Hepatitis B in Trinidad was 11.4 per cent. However, unlike Hepatitis A, there were large differences between the ethnic groups and in the overall study of 4,410 blood samples, evidence of past infection was shown in 17 per cent in those of African ethnic origin, 7.9 per cent of East Indian, 4.2 per cent of Chinese and seven per cent of Caucasian origin. There was no significant difference in the prevalence of Hepatitis B infection between rural and urban dwellers.

It was found, however, that with respect to the prevalence of Hepatitis B infection in adults (over 20 years) in the African ethnic group, the percentage was 17.4 per cent positive in Trinidad while the figure for Tobago was 53.8 per cent.

The results of the survey are to be submitted for publication in the International Journal of Infectious Diseases.

CSO: 5440/028

- TRINIDAD AND TOBAGO

BRIEFS

SUSPECTED TYPHOID--The Ministry of Health is investigating suspected cases of typhoid fever among some patients at two wards of the St Ann's Hospital. The Ministry confirmed yesterday that it is currently investigating the occurrence of diarrhoeal disease with the possibility of typhoid fever being suspected. The patients are now at the Port of Spain General Hospital. A statement from the Ministry said: "Steps to contain the spread of this illness are already being undertaken by officers of the Ministry and the necessary laboratory tests are being done. Visitors are therefore asked to comply with advice given by medical and nursing staff at the institution." [Text] [Port-of-Spain TRINIDAD GUARDIAN in English 5 Jan 85 p 1]

CSO: 5440/032

ZAIRE

BRIEFS

CHOLERA KILLS 19--Kinshasa, Jan 11 (AFP)--Cholera in eastern Zaire has killed at least 19 people in the past few weeks, a medical source reported here Thursday. The deaths occurred near Goma town on the border with Rwanda and around Vitshumbi in the Virunga National Park, 100 kms further north, the source said. Cholera is endemic in those regions, the source noted. The latest outbreak had not yet been brought under control, it added. [Text] [Paris AFP in English 0753 GMT 11 Jan 85]

CSO: 5400/46

ZIMBABWE

IMMEDIATE RESPONSE TO MEASLES OUTBREAK

Harare THE HERALD in English 10 Jan 85 p 5

[Text] The district medical officer for health for Nyanga, Dr Xavier Chaka, has praised members of the Apostolic Faith sect in Nyafaru for their immediate response to an outbreak of measles in the area.

Measles broke out in Nyafaru last week, claiming the life of one child, but as soon as members of the sect discovered the outbreak, they took their children to Nyanga hospital for immunisation, Dr Chaka said.

Fifteen children were taken to the hospital for vaccination and 33 more were immunised by hospital staff in a follow-up operation in the area.

Dr Chaka said the outbreak would have been difficult to contain had it not been for the cooperation of the Vapostori and Nyafaru.

He said the expanded programme on immunisation would be stepped up and urged parents in the district to take their children for vaccination at immunisation centres set up throughout Nyanaga.

CSO: 5400/61

BOLIVIA

BRIEFS

FOOT-AND-MOUTH DISEASE REPORTED--Sucre, 16 Jan (PRESENCIA)--The cattlemen of Hernando Siles and Luis Calvo Provinces, Chuquisaca Department, have reported that they have failed to supply meat to the La Paz market because the cattle in Hernando Siles and Luis Calvo Provinces are afflicted with hoof-and-mouth disease. [Excerpt] [La Paz PRESENCIA in Spanish 17 Jan 85 p 7 PY]

CSO: 5400/2026

BRAZIL

BRIEFS

FOOT-AND-MOUTH OUTBREAK--A violent outbreak of hoof-and-mouth disease is striking cattle in the Sao Jose do Rio Preto region. However, in the Aracatuba region, which is located alongside it, 1.4 million head of cattle are free of the disease but are seriously threatened with contamination. The Agricultural Regional Division of Aracatuba has deactivated the two health inspection checkpoints that existed at the crossings over the Tiete River. [Text] [Sao Paulo O ESTADO DE SAO PAULO in Portuguese 12 Jan 85 p 24] 8711

CSO: 5400/2022

LAOS

BRIEFS

SAVANNAKHET VETERINARY WORK--Along with sending cadres down to unyieldingly promote and guide the improvement and organization of agricultural co-ops in the production base within their province, recently the agriculture, irrigation, and agricultural co-op section in Savannakhet Province has also sent medicines for treating different kinds of animal diseases in the six districts of Khamthaboury, Champhon, Atsaphanthong, Songkhon, Tha Pangthong, and Outhoumphon. There were vaccines for pasteurellosis, hoof-and-mouth disease, streptomycin and penicillin, distilled water, and a great deal of different equipment. Now each local veterinary unit uses these medicines for animal health treatment in their locality aiming at steadily increasing the amount of the people's animal husbandry and to make the contents of plenum six, third session, of the party Central Committee become reality. [Text] [Vientiane PASASON in Lao 30 Aug 84 p 1] 9884

VIENTIANE DISTRICT VETERINARY WORK--On the morning of 7 September 1984 in the agricultural section of Saithani District, Vientiane Capital, there was an official meeting of the district-wide veterinary cadres under the chairmanship of Comrade Bounpheng Savatdiphon of the agriculture, irrigation and agricultural co-op section committee of Saithani District, Vientiane Capital. Honored to attend this meeting were Comrade Chommani of the Vientiane Capital veterinary section committee and veterinary cadres from 7 cantons around the district totalling over 20 comrades. After the ceremony the veterinary cadres who were responsible for each area reported the benefits, problems and organizing techniques they used for their struggle and achievements in their service for the people. Then Comrade Bounphen Savatdiphon, the meeting chairman, summarized and reported to the meeting the actual outcome of the first period of the last 6-month plan of this year in which they were able to vaccinate livestock with anti-pasteurellosis, e.g., 4,640 of the people's buffalo and cattle in 7 cantons. Now they are beginning again to vaccinate the people's livestock against pasteurellosis and hoof-and-mouth disease. According to the plan, by the end of this year they will be able to vaccinate 12,000 livestock or 65 percent of the people's draft animals district-wide. [Text] [Vientiane VIENTIANE MAI in Lao 20 Sep 84 pp 1, 4] 9884

CSO: 5400/4333

NIGERIA

BRIEFS

ANTI-RINDERPEST CAMPAIGN--Nigeria will launch its own part of the pan-African campaign against rinderpest and contagious bovine pleuro-pneumonia next month, the Director, National Veterinary Research Institute, Vom, has said. The Head of State, Major-General Muhammadu Buhari is expected to launch it in the first week of December. The campaign which will last ten years involves 28 tropical African countries with the highest incidence of these two cattle diseases. It is to complement the Food and Agricultural Organisation/Organisation of African Unity (FAO/OAU) joint campaign which was initiated in 1969. This new campaign, according to the director, will require about 400 million doses of vaccines and Nigeria's National Veterinary Research Institute in Vom is expected to supply 18 million doses annually. A similar campaign, the first pan-African campaign against rinderpest and pleuro-pneumonia, known as Joint Project (JP) 28 was launched in February 1971. It was designed to bring African countries together to fight bovine diseases. In Nigeria, about 50 testing units were established and animal vaccination was to go on for five years during the first phase. The aim was to reduce outbreaks of enzootic diseases to below five percent. According to researchers, the new campaign to be launched next month represented "our chance to rid Nigeria of these two diseases." [By Tawey Zakka]  
[Text] [Kaduna NEW NIGERIAN in English 27 Nov 84 pp 1, 9]

CSO: 5400/45

SOUTH AFRICA

### MYSTERY VAAL FISH DISEASE

Johannesburg THE STAR in English 4 Jan 85 p 12

[Article by Melody McDougall]

[Text]

Biologists and zoologists are still baffled by the scores of dead and dying fish which have been floating down the Vaal River.

The phenomenon was first noticed a little more than a month ago when anglers at Vaaldam reported that hundreds of dead fish with huge open sores were in the water. Scores of dead and rotten fish were found along the river bank in the Vaal Triangle area and more were seen downstream near Sasolburg over the Christmas weekend.

Pollution tests have been carried out in the Vaal River but no pollutant has yet been detected.

Mr Anton Steyn, public relations officer for the Department of Water Affairs, said yesterday that only one species of fish — the "moggel" — was affected by the mystery disease.

Mr Steyn said that various members of his department, as well as representatives of the Rand Water Board and experts on fauna and flora, would discuss the matter on Monday. They would also gather new specimens of the fish for further analysis and research at Onderstepoort.

He said that only the mature fish were dying while the younger fish were apparently unaffected.

Mr Steyn added that, if pollution were the cause, yellowfish would have been the first species to be affected.

Dr Rudolph Bigalke, director of the Onderstepoort Veterinary Research Institute, said that biologists and veterinarians were still trying to identify the mysterious disease.

He said that they were investigating the problem from bacteriological, viral, and pathological perspectives but, so far, had not been able to make a diagnosis.

#### NOT FOR EATING

Both Dr Bigalke and Mr Steyn have urged that, until the nature of the disease has been determined, anglers should not eat the dead fish. All dead fish found by anglers should be buried.

The "moggels" (*Labio umbratus*), commonly known as mudfish, are bottom scavengers, related to the carp and the yellowfish.

The "moggel" is silver-grey in colour, grows to 30 to 40 cm and is not generally regarded as edible.

CSO: 5400/58

BARBADOS

BRIEFS

NEW BANANA DISEASE--Banana plants in Barbados are threatened with destruction by a new plant disease. Plant pathologist with the Ministry of Agriculture, Food and Consumer Affairs, Mr. Omer Thomas has reported an occurrence of infectious chlorosis in banana fields in Barbados, according to an Inter-American Institute for Co-operation on Agriculture (IICA) release. IICA quoted Mr. Thomas as saying that the disease was not known to have occurred previously in Barbados and can have serious effects on banana plants ranging from mild streaking on leaves through internal necrosis to death of the plant. "If stools of infected plants are not dug out and burnt the banana fields may eventually be destroyed. The disease is very serious in young suckers, and is transmitted by aphids," Mr. Thomas was quoted as saying. The virus causing the disease is the cucumber mosaic virus. This virus has one of the widest host ranges of all viruses. It is carried in pond weeds, cucumber, melons and periwinkle, among others. The symptoms vary from very mild streaking on the leaves to stunting, internal necrosis and death of the plant. Stunted plants have a rosette appearance due to bunching of the leaves.  
[Text] [Bridgetown BARBADOS ADVOCATE in English 23 Nov 84 p 10]

CSO: 5440/027

UNITED KINGDOM

RECORD GRAIN HARVEST THREATENED BY BEETLES, MITES

London THE DAILY TELEGRAPH in English 5 Jan 85 p 2

[Article by Peter Pryke]

[Text]

**A** PLAGUE of beetles and mites is threatening the record grain harvest now in store. Farmers face losing thousands of pounds.

One insect control firm said yesterday that in the last five months it had sprayed more than 750,000 tonnes of infested grain, or more than three times the normal amount.

Mr Philip Perry, of Northern Fumigation Services, Goole, said: "If nothing is done and the infestation really gets a hold it could cost farmers thousands of pounds."

The pests, including the saw-toothed grain beetle and the granary weevil, have multiplied as a result of the bumper 26 million-tonne harvest and the increased amounts going into store.

The problem has been compounded by the fact that much of it has gone into improvised stores, including derelict hangars, instead of pest-proof

air-cooled silos.

The insects generate their own heat and the temperature in a 13,000-tonne store recently treated by Mr Perry's firm had reached 140F.

**Higher in South**

"The possibility of ships catching fire because of spontaneous combustion in infested grain in the hold could not be ruled out," he said.

But if infestation was spotted at sea "there is very little that could be done about it."

He believes that about one in four farms with grain stores in his area have infestations and that the proportion is higher in the warmer southern counties.

A Ministry of Agriculture spokesman said last night that officials had received more requests than usual from farmers for advice on fumigating grain following the record harvest and hot summer. It was hoped following the record harvest the problem would decline with the onset of cold weather.

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VIETNAM

STATUS OF CROP PESTS NATIONWIDE REPORTED

OW261432 Hanoi Domestic Service in Vietnamese 1100 GMT 25 Jan 85

[Text] According to a notice issued recently by the vegetation protection department of the Ministry of Agriculture, rice blast has ravaged the rice crop in the southern provinces and Mekong Delta, at an infestation rate of 5 to 10 percent. Leaf folders and rice gall flies have damaged the winter-spring rice crop in the central provinces and Mekong Delta. Due to the prolonged severe cold, the late-planted spring rice seedlings and the recently transplanted fifth-month rice in the northern provinces have been killed here and there. The infestation density of stem borers affecting the stalks and roots of rice seedlings still remains high, averaging from 5 to 20 per square meter. Other crops such as potatoes are infested with Phytophthora infestants. Green tobacco aphids are ravaging tobacco plants while Cirphis salebrosa and black cutworms are developing and affecting the corn crop.

It is forecast that rice blast will continue to spread and cause damage to the winter-spring rice crop in the southern provinces while leaf folders, stem borers, and pentatomid bugs will continue to cause damage. In the northern provinces, Phytophthora infestants, Cirphis salebrosa, and stem borers will continue to develop.

It is recommended that localities should properly carry out eradication work. The southern provinces should immediately stop applying nitrogenous fertilizer to the rice crop to restrict rice blast infestation. To eliminate leaf folders, the northern provinces should plant sufficient rice seedlings and protect them from being killed by cold weather. Stem borers must be completely exterminated when they carried in the ricefields to prevent stem borers from developing. Cirphis salebrosa must be promptly eradicated from the winter-spring vegetables and subsidiary and industrial crops.

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ZIMBABWE

ARMY WORM WIPING OUT CROPS

Reported in Zambezi Valley

Harare THE HERALD in English 8 Jan 85 p 1

[Text] An outbreak of armyworm has been reported in the Mzarabani area of the Zambezi Valley and there are fears that adult worms might have already reached Guruve.

The head of the Plant Protection Research Institute, Dr Shadrack Mlambo said yesterday the outbreak was reported on Friday morning and a check on the spot by staff found that the worms had covered as much as 100km<sup>2</sup>.

In some cases whole crops had been wiped out, he said, adding that the worms had been feeding on maize, sorghum, millet and grass.

Supervise

Chemicals were sent out on Friday afternoon.

"On Sunday I went out to Guruve where a similar report had been made," said Dr Mlambo. "I found the Agritex officer for the area having left for Mzarabani that morning to supervise the operation there."

"Staff found a mixed population at all stages of growth and there are fears that some adults might have moved elsewhere. The question now is where else could they have gone to and we are looking into that."

Dr Mlambo said there were enough stocks of chemicals to deal with outbreaks in the country.

A Press statement a week ago said countries to the north indicated African armyworm moths were on the wing and an invasion could be expected in the next two months because Zimbabwe was on their flight path.

### **Serious**

The worms can cause serious damage to maize, sorghum, rapoko, rice and sugar cane, said the Ministry of Agriculture statement.

Anyone seeing a velvet caterpillar with fine yellow or white lines along the side of the body should report to the nearest Agritex office.

Information can also be sent to the Plant Protection Research Institute in Harare with details on where the worm is, the size of the area covered, how thick the infestation and what the worm is eating.

The institute would be grateful to have samples of about 20 caterpillars kept in methylated or surgical spirit.

### **Sprayers Rushed to Threatened Areas**

Harare THE HERALD in English 10 Jan 85 p 1

[Text] The 6 000 families in the far north of Zimbabwe fighting to save their crops from invading armyworms urgently need more knapsack sprayers.

Agritex says more are on the way.

The Herald visited the infested area, Mzarabani in the Zambezi Valley, on Tuesday and found the morale of the communal farmers involved in the battle high.

They said there were many spare hands which could be used should the Government provide more spraying equipment.

The delivery of carbaryl, the chemical being used to douse the worms, could be speeded up to ensure all knapsacks were working all the time, they said.

An Agritex official, Mr Peter Silk, said more knapsacks were sent to Mzarabani yesterday as well as on Tuesday, but would not say how many.

The Mzarabani outbreak is confined to Hoya ward of six villages near the north-eastern border with Mozambique. A spokesman for Agritex said the worms had infested an area 20 km by 6 km.

The Herald spoke to the chairman of Hoya ward development committee, Cde Cleopas Murimo, who said he had brought the worm menace to the notice of the Ministry of Agriculture.

Communal farmers first noticed something wrong after the New Year. On January 3 Cde Murimo reported to the Agritex supervisor for Mzarabani, Cde Oswell Mubariki.

Cde Mubariki told The Herald that he took samples to the Henderson Research Station's crop protection unit which identified the pest as armyworm.

Cde Murimo said the Wardco decided that every family head and his wife or their children should be involved and Vicos were delegated to organise the operation in their respective villages. Women collect water for the mix and men and girls spray.

He said the Government provided seven knapsacks of which two were soon out of order. Farmers brought in four themselves.

Spraying started on Friday in Mafendu village and by Tuesday about 40 family holdings had been sprayed. Cde Murimo said that in all almost 6 000 families need their plots treated.

There were fears that--considering the pace at which spraying was taking place because of the shortage of knapsacks--some of the crops would have been destroyed by the time spraying gets round.

The worms clean out a whole field in a short time, particularly where weeding has been done. Most affected are late planted maize, sorghum and groundnuts. Hard-leaved plants show few signs of infestation.

Warnings in the newspapers and radio bulletins the previous weekend that armyworm moths were on the wing in countries to the north had put Mazarabani farmers on the alert, said Cde Murimo.

"It will take us a long time to finish holdings of all the 6 000 families in Hoya ward," he said.

"We only pray that the rain gives us a chance to get on with the job because when we had a downpour on Monday, we had to suspend operations. There are many places where maize has been completely eaten out."

Meanwhile, the head of the Plant Protection Research Institute, Dr Shadreck Mlambo, said yesterday that an unconfirmed report to the effect that there had been outbreaks in Guruve and Mhangura had proved false.

However, a recent small outbreak in Kwekwe had been controlled. A commercial farmer to the east of Bindura had put out an outbreak on his farm.

Menace Under Control

Harare THE HERALD in English 11 Jan 85 p 1

[Text] The Government is on top of the armyworm outbreak in Mzarabani in the Zambezi Valley with around 40 knapsack sprayers now available; but an outbreak has been reported from Mutare.

About 900 kg of the insecticide used to kill the armyworms, carbaryl, had been sent to the escarpment, said the head of the Plant Protection Research Institute, Dr Shadreck Mlambo, yesterday, and this should be enough to eradicate the pest in Mzarabani.

"The control exercise is going on very well and there are enough knapsacks and chemicals."

Mr Peter Silk, who is co-ordinating the battle for Agritex, said about 40 sprayers had already been sent to the valley.

About 6 000 families are fighting the pest which has invaded their land in the Hoya ward of Mzarabani communal lands.

The worm is hitting young plants while causing little damage to fields of more mature crops. But rains started late in the Zambezi Valley, making the area susceptible in early January.

In Mutare a few armyworms were found in the prison. Agritex wants any further outbreaks reported. The spokesman for Agritex told our correspondent that most crops in Manicaland were now mature enough to have little susceptibility to damage.

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ZIMBABWE

BEETLES ATTACK MAIZE, FRUIT

Harare THE HERALD in English 10 Jan 85 p 3

[Text] There has been a mild outbreak of colourful beetles attacking maize in Harare and fruit in Marondera.

The beetles (conostethus), which are identified by a yellow and black pattern on their shells, have invaded 0,5 ha of maize at Guri plot, Glen View.

The owner, Mrs Alice Guri, said most of the maize planted in September had been destroyed by the beetles which invaded the field in early December.

The infestation, she said, was spreading.

"The pest waits until the maize is ripe then it attacks the cob from the tip down," Mrs Guri said.

A Plant Protection Research Institute spokesman in Harare said that last week there was a report from Grasslands Research Station, Marondera, about apples and peaches being attacked.

"These beetles are common in Zimbabwe," he said, adding that carbaryl or malathion would kill them.

People seeing unusual insects should take them to the institute in Harare for identification.

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END